Airports Division

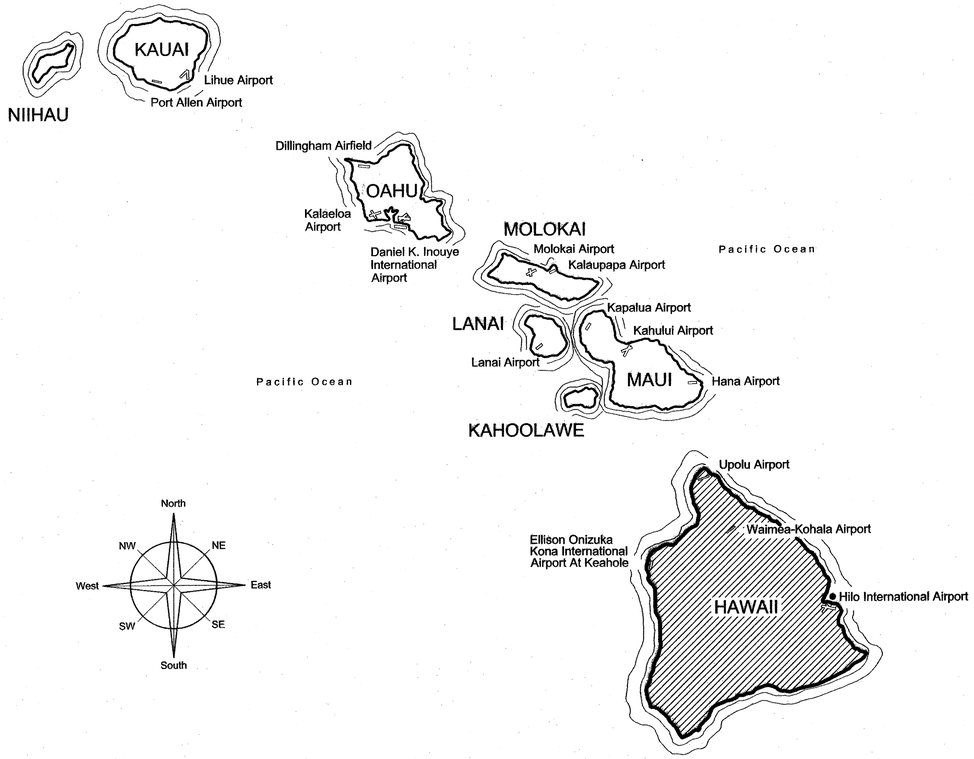
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

PLANS FOR

DRAINAGE & WIND CONE IMPROVEMENTS

AT

HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII
PROJECT NO. AH1021-20



PROJECT TEAM

CIVIL:
WESLEY R. SEGAWA & ASSOCIATES, INC.
736 SOUTH STREET,
SUITE 203
HONOLULU, HAWAII 96813
808-536-4495

NEAL S. FUKUMOTO LICENSED PROFESSIONAL ENGINEER No. 6186-C HAWAII USA

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

NEAL S. FUKUMOTO
CIVIL ENGINEER

4/30/24
EXPIRATION DATE

ELECTRICAL:
RONALD N.S. HO & ASSOCIATES, INC.
2153 N. KING STREET,
SUITE 201
HONOLULU, HAWAII 96819
808-941-0577

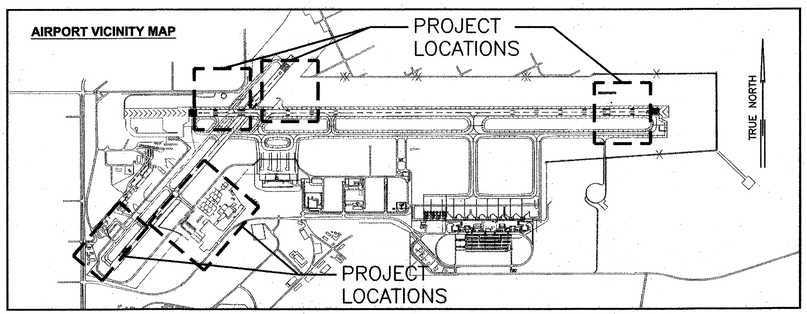
BILLY J. ORNELLAS LICENSED PROFESSIONAL ENGINEER No. 11658-E HAWAII USA

I HEREBY CERTIFY THAT THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

BILLY J. ORNELLAS
ELECTRICAL ENGINEER

4/30/24
EXPIRATION DATE

AIRPORT VICINITY MAP



DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED:

DIRECTOR OF TRANSPORTATION — DATE 10/27/22

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

SHEET TITLE:

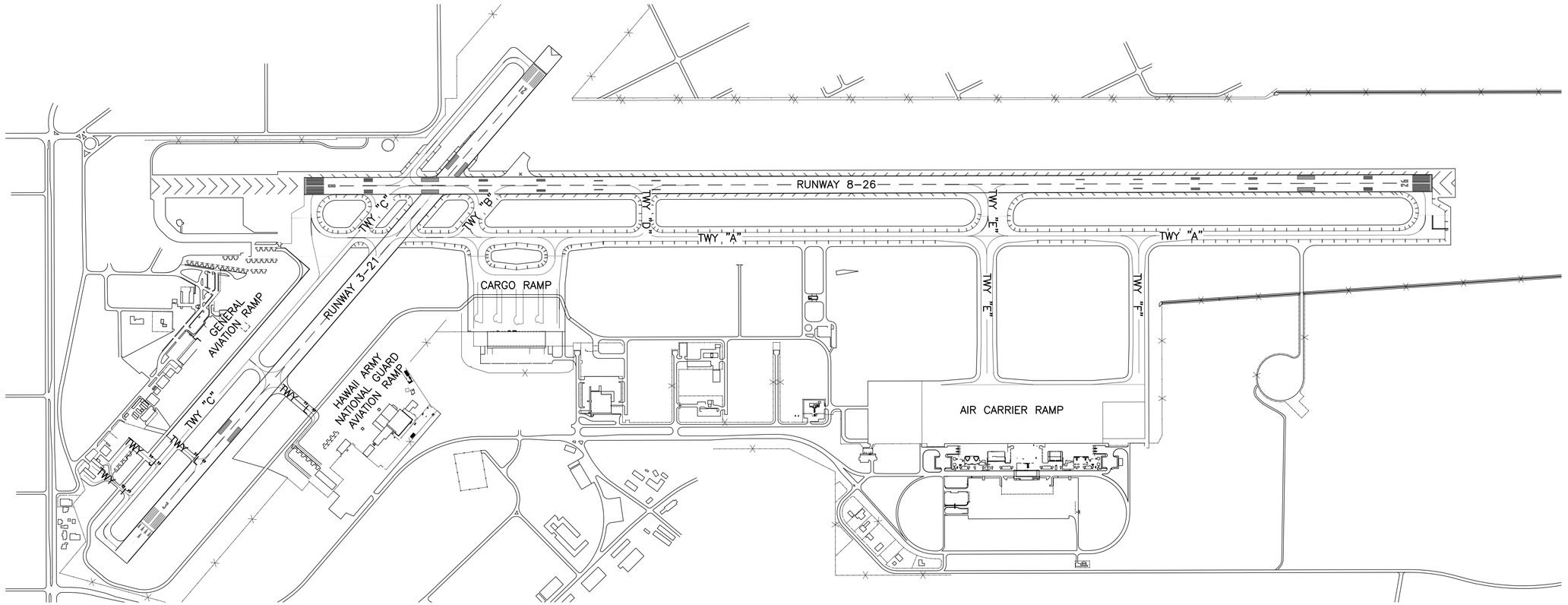
TITLE SHEET

DATE :
OCTOBER 2022

SHEET :
1 OF 50 SHEETS

DWG. NO.
G-1

I:\CADD\PROJECT DRAWINGS\1711 DOTA CIP AIRFIELD OPEN ENDHILO\PONDING IMPROVEMENTS\DESIGN\TC - PONDING IMPROVEMENTS TITLE SHEET.DWG



HILO INTERNATIONAL AIRPORT SITE PLAN

SCALE: 1"=500'

ABBREVIATIONS:

@	AT
Δ	ANGLE OF INTERSECTION
AC	ADVISORY CIRCULAR
AIR–EE	DEPARTMENT OF TRANSPORTATION, AIRPORTS DIVISION, ENGINEERING ENVIRONMENTAL SECTION
AOA	AIR OPERATIONS AREA
ARFF	AIRCRAFT RESCUE AND FIREFIGHTING
ASOS	AUTOMATED SURFACE OBSERVING SYSTEM
ATCT	AIR TRAFFIC CONTROL TOWER
AWOS	AUTOMATED WEATHER OBSERVING SYSTEMS
BMP	BEST MANAGEMENT PRACTICE
C.A.P.	CIVIL AIR PATROL
C/L	CENTERLINE
CSPP	CONSTRUCTION SAFETY AND PHASING PLAN
CLR	CLEAR
DME	DISTANCE MEASURING EQUIPMENT
DOH	DEPARTMENT OF HEALTH
GPS	GLOBAL POSITIONING SYSTEM
HDOTA	HAWAII DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION
HIARNG	HAWAII ARMY NATIONAL GUARD
ILS	INSTRUMENT LANDING SYSTEM
ITO	HILO INTERNATIONAL AIRPORT
LHA	LIGHT HOUSING ASSEMBLY
MALSR	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATOR LIGHTS
MAX	MAXIMUM
NAVAID	NAVIGATIONAL AID
OTS	OUT OF SERVICE
PAPI	PRECISION APPROACH PATH INDICATORS
RNAV	AREA NAVIGATION
RRP	RUNWAY REFERENCE POINT
RSA	RUNWAY SAFETY AREA
ROFA	RUNWAY OBJECT FREE AREA
RWY	RUNWAY
TCH	THRESHOLD CROSSING HEIGHT
TSA	TAXIWAY SAFETY AREA
TOFA	TAXIWAY OBJECT FREE AREA
RWY	RUNWAY
SSBMP	SITE SPECIFIC BMP PLAN
SSC	SYSTEM SUPPORT CENTER
SWMPP	STORM WATER MANAGEMENT PROGRAM PLAN
TWY	TAXIWAY
TYP.	TYPICAL
W/	WITH
WEF	WIND EQUIPMENT F–420

INDEX OF DRAWINGS

INDEX OF DRAWINGS

STATE OF HAWAII 1959

Airports Division

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186–C
HAWAII U.S.A.

This work was prepared by me or under my supervision.
Exp. 04–30–24

Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

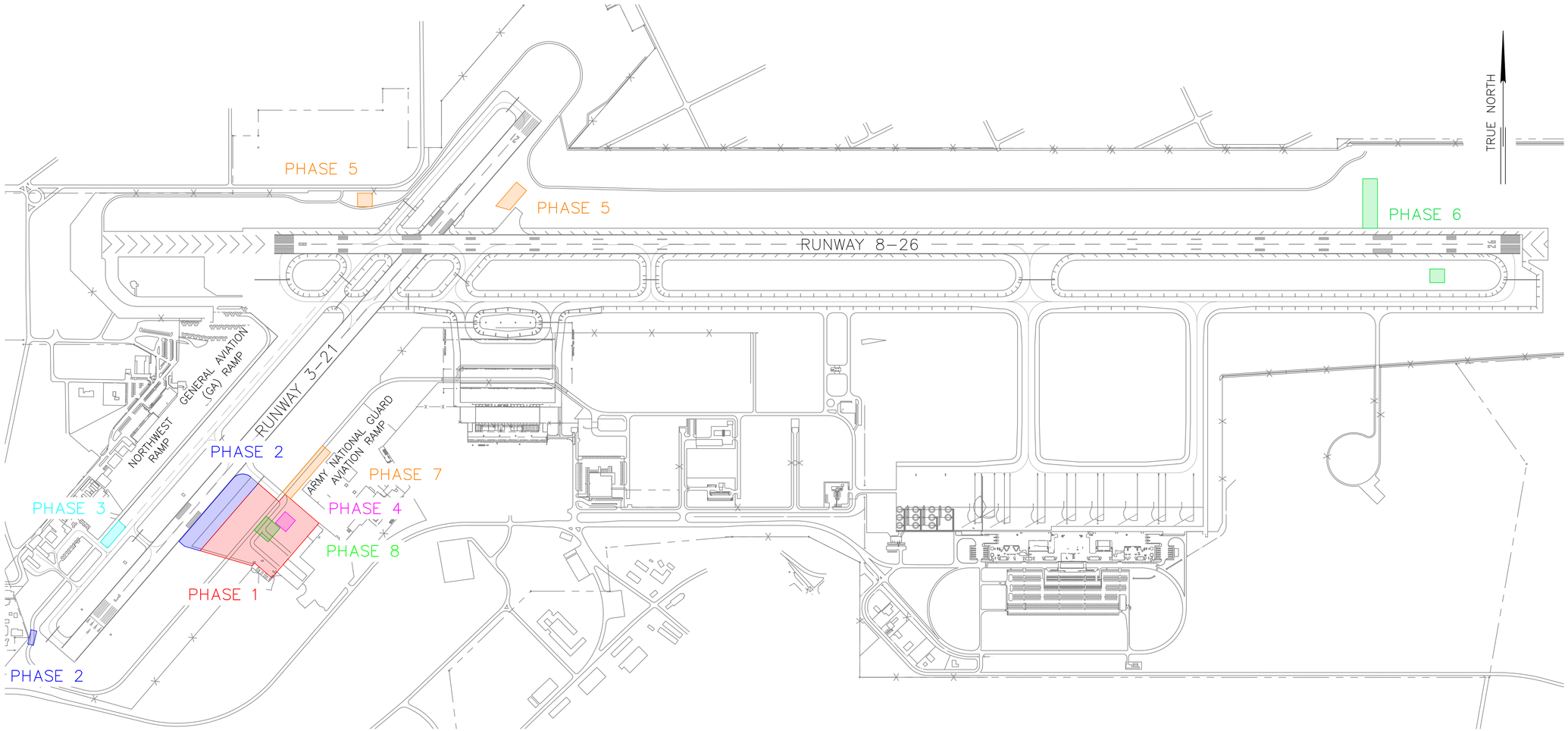
SHEET TITLE:

GENERAL SITE PLAN

DATE :
OCTOBER 2022

SHEET :
2 OF 50 SHEETS

DWG. NO.
G-2



SCOPE OF WORK:

PHASE 1
- INSTALLATION OF DRY WELLS NEAR THE ARMY NATIONAL GUARD AVIATION RAMP.
- REPAIR OF AC PAVEMENT AT THE CIVIL AIR PATROL DRIVEWAY ENTRANCE ON AIRPORT ROAD.

PHASE 2
- DEMOLITION OF BROKEN AC PAVEMENT IN FRONT OF THE ARMY NATIONAL GUARD AVIATION RAMP.
- INSTALLATION OF DRY WELLS.
- GRASS AND GRADE DEMOLISHED AC PAVEMENT AREAS.
- INSTALLATION OF DRY WELLS ALONG THE PERIMETER ROAD BEHIND RUNWAY 3.

PHASE 3
- INSTALLATION OF DRY WELL.
- GRADE AND GRASS SPECIFIED AREAS.

PHASE 4
- INSTALLATION OF COMPASS CALIBRATION PAD.

PHASE 5
- DEMOLITION OF RUNWAY 8 SEGMENTED CIRCLE.
- DEMOLITION AND RELOCATION OF THE RUNWAY 8 WIND CONE.
- DEMOLITION AND RELOCATION OF THE RUNWAY 21 WIND CONE.

PHASE 6
- DEMOLITION AND RELOCATION OF THE RUNWAY 26 WIND CONE.

PHASE 7
- ASPHALT REPLACEMENT AT THE HIARNG RAMP.

PHASE 8
- ASPHALT REPLACEMENT AT THE HIARNG RAMP.

TENTATIVE CONSTRUCTION SCHEDULE:

PHASE 1: 90 CALENDAR DAYS
PHASE 2: 30 CALENDAR DAYS (RUNWAY 3–21 CLOSED)
PHASE 3: 14 CALENDAR DAYS
PHASE 4: 14 CALENDAR DAYS
PHASE 5: 28 CALENDAR DAYS
PHASE 6: 28 CALENDAR DAYS (RUNWAY 8–26 CLOSED)
PHASE 7: 7 CALENDAR DAYS
PHASE 8: 7 CALENDAR DAYS

TENTATIVE PHASE WORK HOURS:

PHASES 1–5, 7–8: 0600 TO 1600 HOURS, HST
PHASE 6: 2100 TO 0600 HOURS, HST

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

DSGN.	DRWN.	CHKD.	APPD.
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KEY PLAN / NOTES:

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PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

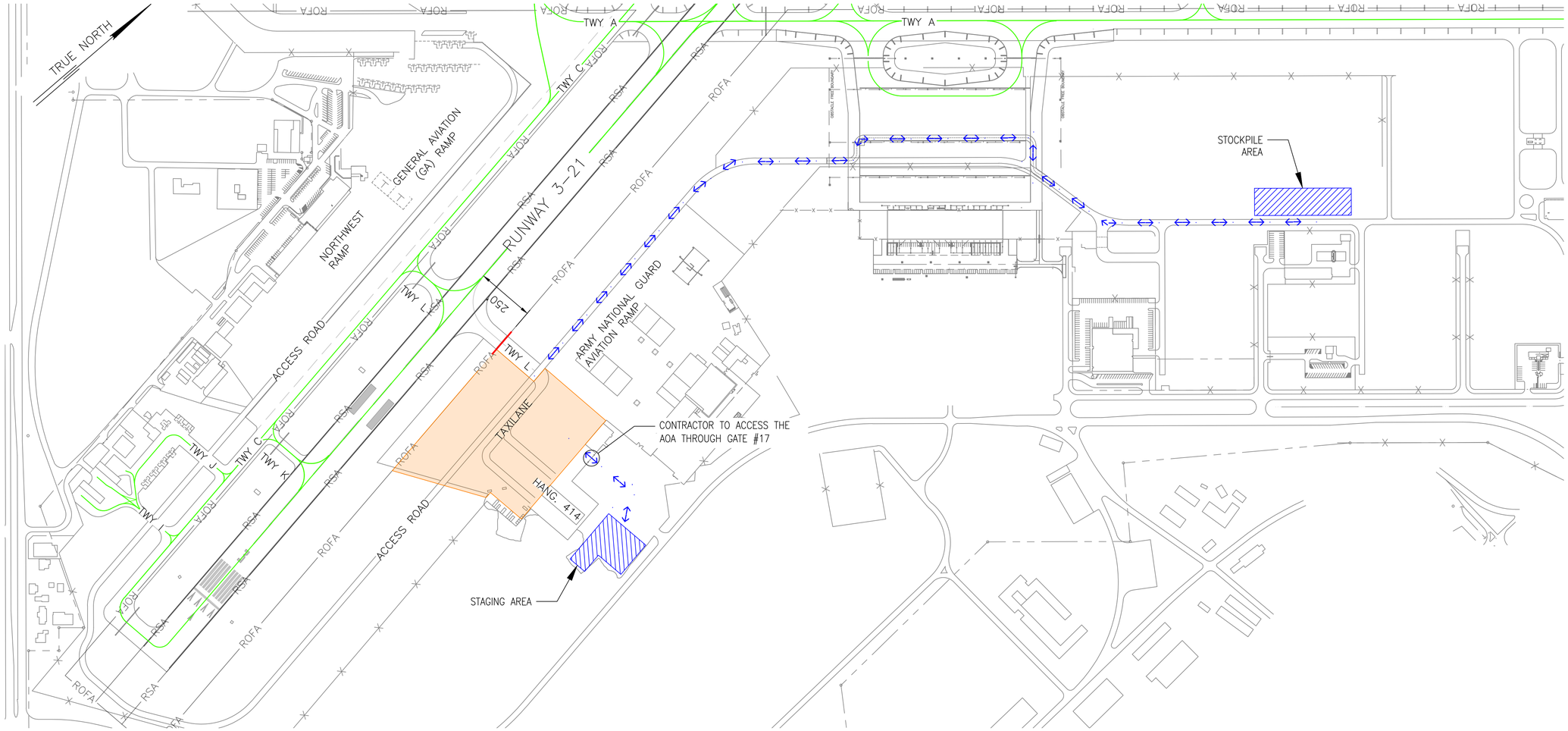
AH1021-20

SHEET TITLE:

OVERALL PHASING PLAN

DATE :
OCTOBER 2022
SHEET :
3 OF 50 SHEETS

DWG. NO.
G-3



ITO DRAINAGE IMPROVEMENTS – PHASE 1
SCALE: 1"=250'

PHASING AND BARRICADE PLAN – PHASE 1

DESCRIPTION:
1. DEMOLITION OF BROKEN AC PAVEMENT IN FRONT OF THE ARMY NATIONAL GUARD AVIATION RAMP, INSTALLATION OF DRY WELLS TO ADDRESS PONDING ISSUES, AND GRASS AND GRADE DEMOLISHED AC PAVEMENT LOCATED OUTSIDE THE ROFA.
2. RESTRIPE TAXILANE INFRONT OF HANGAR 414.

TYPE:
PARTIAL RAMP CLOSURE

DURATION:
90 CALENDAR DAYS

WORKING HOURS:
0600 TO 1600 HOURS, HST

SCHEDULED DATES:
TBD

REQUIRED NOTAMS:
1. TAXIWAY L EAST OF RUNWAY 3–21 CLOSED
2. ARMY NATIONAL GUARD AVIATION RAMP PARTIALLY CLOSED
3. HELICOPTER OPERATIONS, CAUTION WORK IN PROGRESS
4. NOTAMs FOR TALL EQUIPMENT (WHEN APPLICABLE)

NOTES:
1. THE CONTRACTOR SHALL NOT DAMAGE, OBSTRUCT, OR ALTER EXISTING NAVAIDS.
2. THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH THE ATCT AND YIELD TO ANY AIRCRAFT WHEN DIRECTED BY THE ATCT.
3. WHEN THE CONTRACTOR IS DIRECTED TO PULLBACK BY THE ATCT, THE CONTRACTOR SHALL BARRICADE OFF THE WORK AREA AND REMOVE ALL LARGE EQUIPMENT FROM THE WORK AREA.
4. THE CONTRACTOR SHALL ENSURE THE ACCESS ROAD REMAINS OPEN THROUGHOUT THE ENTIRETY OF CONSTRUCTION.
5. THE CONTRACTOR SHALL COORDINATE WITH ITO TO RELOCATE HANGAR 414 PARKED AIRCRAFT.
6. HELICOPTER OPERATIONS USUALLY USE THE TAXIWAYS IN THE WORK AREA. THE CONTRACTOR SHALL COORDINATE WITH ITO AND ATCT TO NOTIFY HELICOPTER OPERATIONS OF WORK TIMES AND REROUTE HELICOPTER FLIGHT PATHS WHEN NECESSARY. ARMY NATIONAL GUARD HELICOPTERS COULD POSSIBLY BE DIVERTED TO DEPART TO THE NORTHEAST.

NOTES (CONT.)
7. THE CONTRACTOR SHALL ENSURE ALL APPLICABLE FAA FORM 7460–1 FOR TEMPORARY CONSTRUCTION VEHICLES ARE SUBMITTED AND APPROVED PRIOR TO THE START OF WORK.

RUNWAY 8–26 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	500 FT.
RUNWAY OBJECT FREE AREA (ROFA):	800 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

RUNWAY 3–21 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	150 FT.
RUNWAY OBJECT FREE AREA (ROFA):	500 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

LEGEND:
- PROJECT WORK AREA
- HAUL ROUTE
- STAGING/STOCK PILE AREA
- AIRCRAFT TRAVEL ROUTE
- LOW PROFILE BARRICADES

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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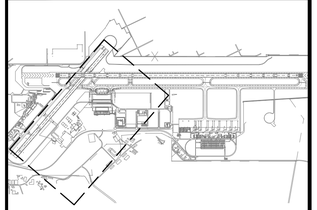
KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

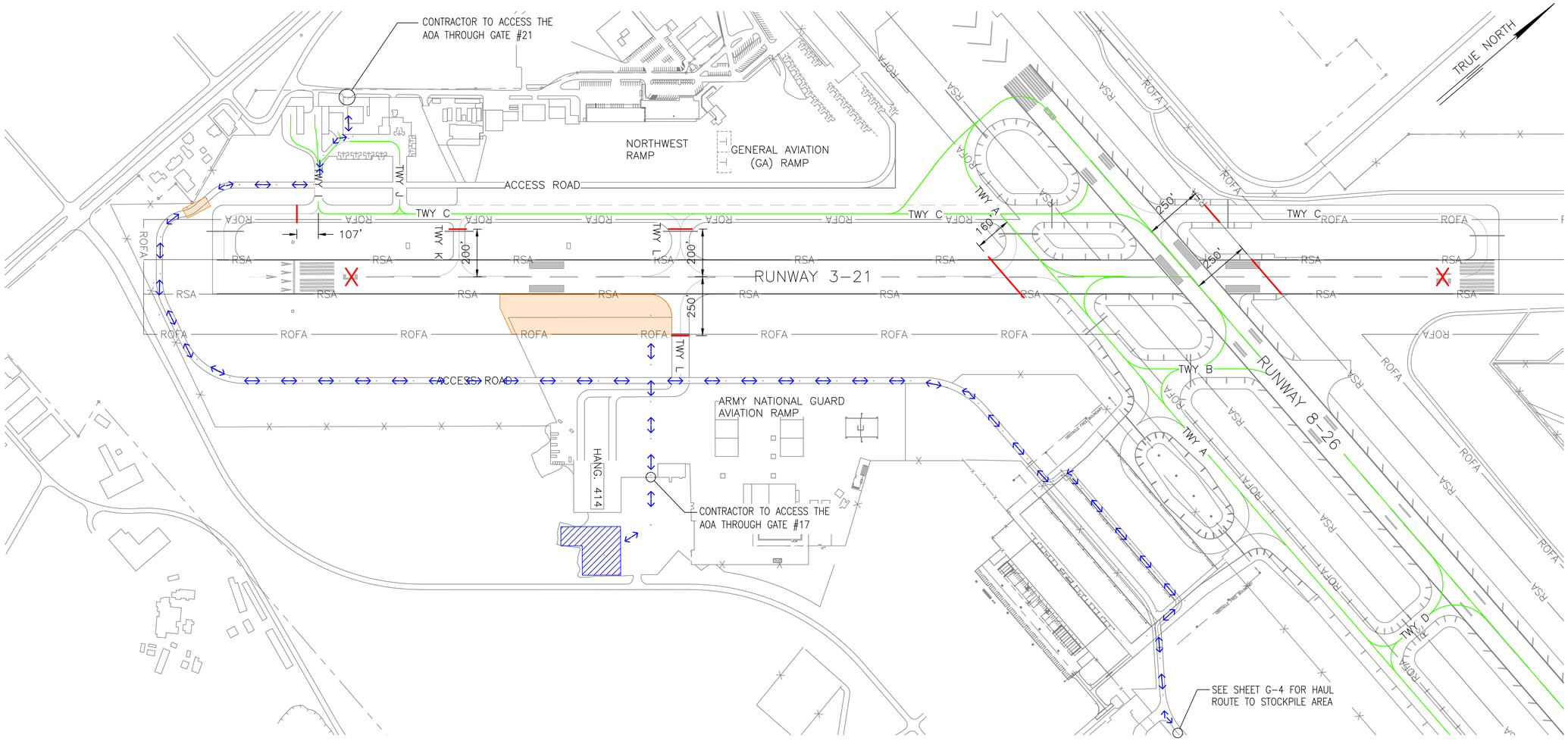
PROJECT NO.:

AH1021-20

SHEET TITLE:

CSPP - PHASE 1

DATE :	DWG. NO.
OCTOBER 2022	G-4
SHEET :	
4 OF 50 SHEETS	



ITO DRAINAGE IMPROVEMENTS – PHASE 2
SCALE: 1"=250'

PHASING AND BARRICADE PLAN – PHASE 2

DESCRIPTION:
1. DEMOLITION OF BROKEN AC PAVEMENT IN FRONT OF THE ARMY NATIONAL GUARD AVIATION RAMP, INSTALLATION OF DRY WELLS TO ADDRESS PONDING ISSUES, AND GRASS AND GRADE DEMOLISHED AC PAVEMENT, LOCATED INSIDE THE ROFA.
2. INSTALLATION OF DRY WELLS ALONG THE ACCESS ROAD BEHIND RUNWAY 3–21.

TYPE:
RUNWAY CLOSURE

DURATION:
30 CALENDAR DAYS

WORKING HOURS:
0600 TO 1600 HOURS, HST

SCHEDULED DATES:
TBD

REQUIRED NOTAMS:
1. RUNWAY 3–21 CLOSED
2. TAXIWAY C CLOSED SOUTH OF TAXIWAY I
3. TAXIWAY C CLOSED NORTH OF RUNWAY 8–26
4. TAXIWAY K CLOSED
5. TAXIWAY L CLOSED
6. ARMY NATIONAL GUARD AVIATION RAMP WORK IN PROGRESS
7. RUNWAY 3–21 VASI OTS (0600–1600 HST)
8. NOTAMs FOR TALL EQUIPMENT (WHEN APPLICABLE)

NOTES:
1. THE CONTRACTOR SHALL NOT DAMAGE, OBSTRUCT, OR ALTER EXISTING NAVAIDS.
2. THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH THE ATCT AND YIELD TO ANY AIRCRAFT WHEN DIRECTED BY THE ATCT.
3. A LIGHTED "X" SHALL BE PLACED AT EACH RUNWAY END AND LOW PROFILE BARRICADES SHALL BE PLACED AT EACH TAXIWAY CONNECTION BEFORE CLOSING THE RUNWAY.
4. THE CONTRACTOR SHALL ENSURE THE ACCESS ROAD REMAINS OPEN THROUGHOUT THE ENTIRETY OF CONSTRUCTION.
5. THE CONTRACTOR SHALL COORDINATE WITH ITO TO RELOCATE HANGAR 414 PARKED AIRCRAFT.

NOTES (CONT.)
6. HELICOPTER OPERATIONS USUALLY USE THE TAXIWAYS IN THE WORK AREA. THE CONTRACTOR SHALL COORDINATE WITH ITO TO NOTIFY HELICOPTER OPERATIONS OF WORK TIMES AND REROUTE HELICOPTER FLIGHT PATHS WHEN NECESSARY. ARMY NATIONAL GUARD HELICOPTERS COULD POSSIBLY DEPART TO THE NORTHEAST.
7. THE CONTRACTOR SHALL ENSURE ALL APPLICABLE FAA FORM 7460–1 FOR TEMPORARY CONSTRUCTION VEHICLES ARE SUBMITTED AND APPROVED PRIOR TO THE START OF WORK.
8. AT THE END OF EACH WORKING PERIOD, THE CONTRACTOR MUST ENSURE THE EDGE OF RUNWAY DOES NOT HAVE MORE THAN A 3" DROP FROM TOP OF RUNWAY TO GRADE.

RUNWAY 8–26 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	500 FT.
RUNWAY OBJECT FREE AREA (ROFA):	800 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

RUNWAY 3–21 & ASSOCIATED TAXIWAYS

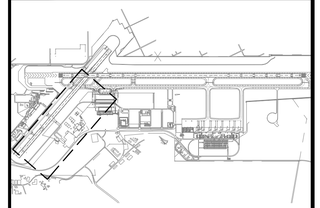
RUNWAY SAFETY AREA (RSA):	150 FT.
RUNWAY OBJECT FREE AREA (ROFA):	500 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

LEGEND:
- PROJECT WORK AREA
- HAUL ROUTE
- STAGING/STOCK PILE AREA
- AIRCRAFT TRAVEL ROUTE
- LOW PROFILE BARRICADES
- X — LIGHTED "X"

STATE OF HAWAII 1959
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

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DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

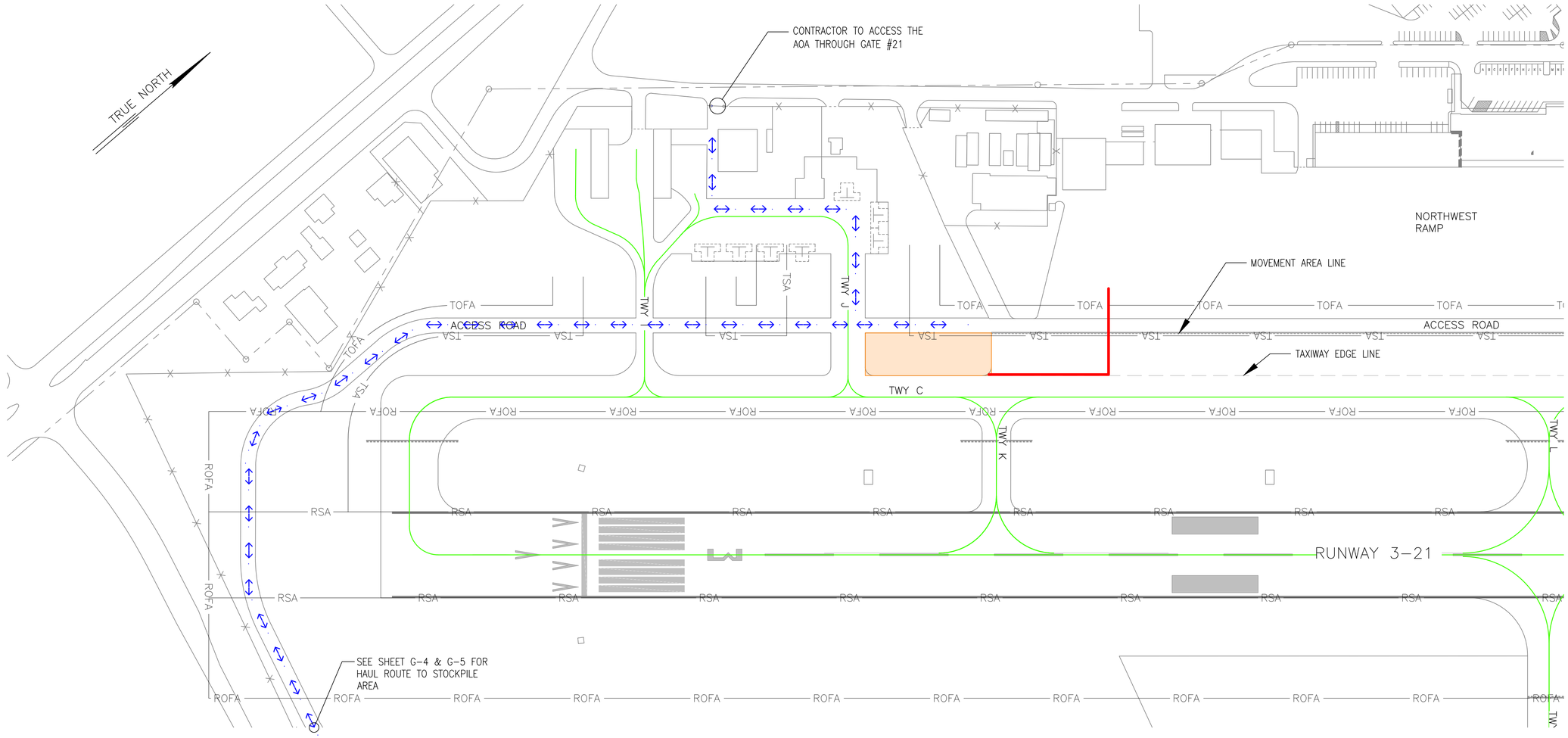
PROJECT NO.:

AH1021-20

SHEET TITLE:

CSPP - PHASE 2

DATE :	DWG. NO.
OCTOBER 2022	G-5
SHEET :	
5 OF 50 SHEETS	



ITO DRAINAGE IMPROVEMENTS – PHASE 3
SCALE: 1"=100'

PHASING AND BARRICADE PLAN – PHASE 3

DESCRIPTION:
1. REGRADE AND REGRASS SHOULDER AREA TO ADDRESS PONDING ISSUES.
2. INSTALL DRY WELL.

TYPE:
WORK IN PROGRESS

DURATION:
14 CALENDAR DAYS

WORKING HOURS:
0600 TO 1600 HOURS, HST

SCHEDULED DATES:
TBD

REQUIRED NOTAMS:
1. TAXIWAY C WORK IN PROGRESS
2. TAXIWAY C AIRCRAFT WINGSPAN LIMITED TO 70' BETWEEN TAXIWAY J AND 200 FT NORTHEAST OF TAXIWAY K
3. TAXIWAY J WORK IN PROGRESS
4. TAXIWAY J AIRCRAFT WINGSPAN LIMITED TO 70'
5. NORTHWEST RAMP PARTIAL CLOSURE
6. NOTAMs FOR TALL EQUIPMENT (WHEN APPLICABLE)

NOTES:
1. THE CONTRACTOR SHALL NOT DAMAGE, OBSTRUCT, OR ALTER EXISTING NAVAIDS.
2. THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH THE ATCT AND YIELD TO ANY AIRCRAFT WHEN DIRECTED BY THE ATCT.
3. THE CONTRACTOR SHALL SETUP BARRICADES AROUND THE AFFECTED AREAS OF WORK THROUGH OUT THE PHASE.
4. THE CONTRACTOR SHALL ENSURE THE ACCESS ROAD REMAINS OPEN THROUGHOUT THE ENTIRETY OF CONSTRUCTION.
5. THE CONTRACTOR SHALL COORDINATE WITH ITO AND ATC TO IMPLEMENT REQUIRED AIRCRAFT GROUP RESTRICTIONS FOR TAXIWAY C DURING WORK HOURS.
6. THE CONTRACTOR SHALL ENSURE ALL APPLICABLE FAA FORM 7460-1 FOR TEMPORARY CONSTRUCTION VEHICLES ARE SUBMITTED AND APPROVED PRIOR TO THE START OF WORK.

RUNWAY 8–26 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	500 FT.
RUNWAY OBJECT FREE AREA (ROFA):	800 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

RUNWAY 3–21 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	150 FT.
RUNWAY OBJECT FREE AREA (ROFA):	500 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

LEGEND:
- PROJECT WORK AREA
- HAUL ROUTE
- STAGING/STOCK PILE AREA
- AIRCRAFT TRAVEL ROUTE
- LOW PROFILE BARRICADES

STATE OF HAWAII
1959

Airports Division
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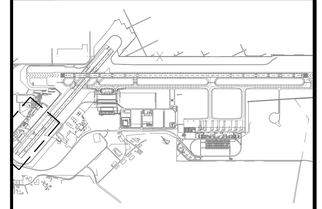

NO.	DATE	REVISIONS

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AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

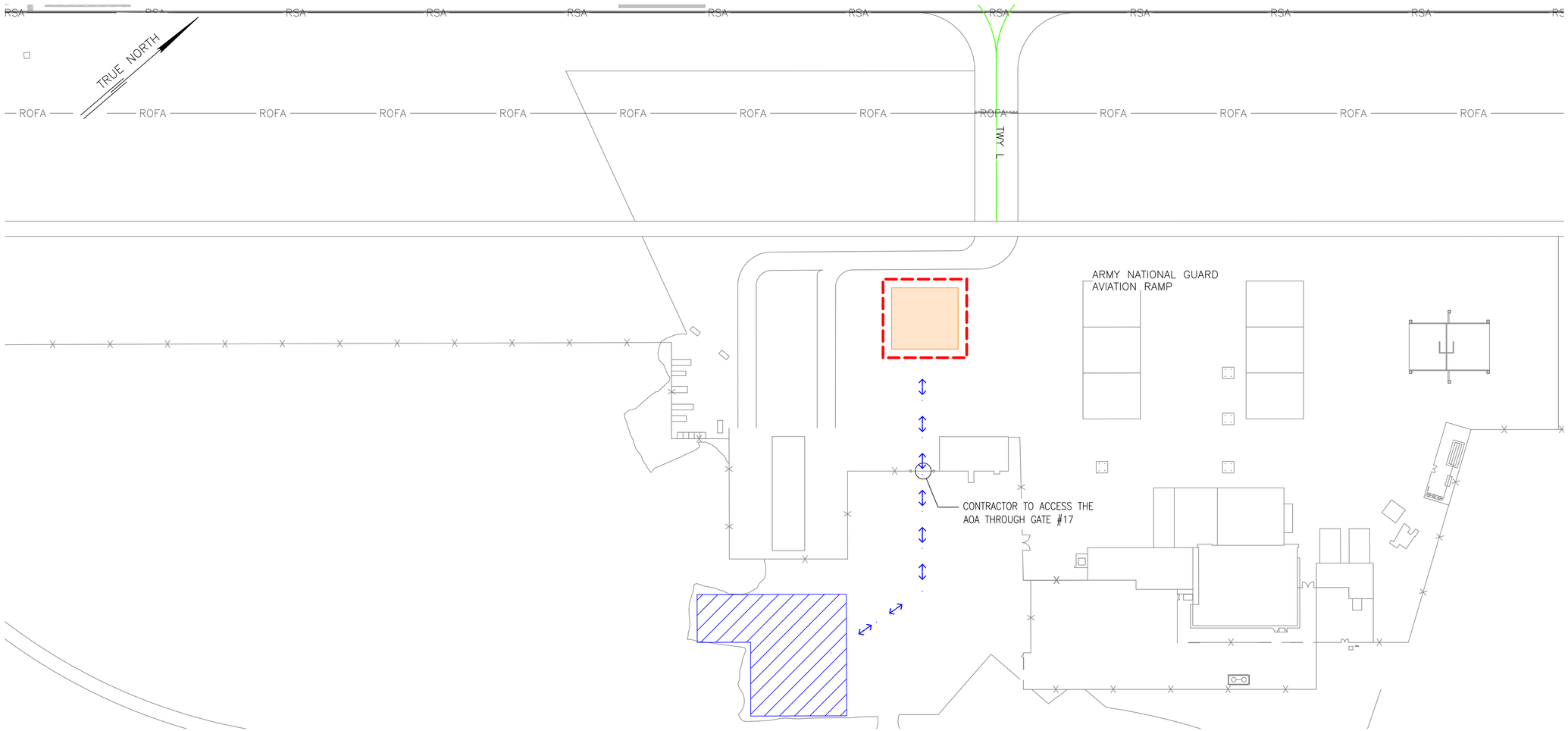
PROJECT NO.:

AH1021-20

SHEET TITLE:

CSPP - PHASE 3

DATE :	DWG. NO.
OCTOBER 2022	G-6
SHEET :	
6 OF 50 SHEETS	



ITO DRAINAGE IMPROVEMENTS – PHASE 4
SCALE: 1"=100'

PHASING AND BARRICADE PLAN – PHASE 4

DESCRIPTION:
1. INSTALLATION OF COMPASS CALIBRATION PAD.

TYPE:
WORK IN PROGRESS

DURATION:
14 CALENDAR DAYS

WORKING HOURS:
0600 TO 1600 HOURS, HST

SCHEDULED DATES:
TBD

REQUIRED NOTAMS:
1. ARMY NATIONAL GUARD AVIATION RAMP WORK IN PROGRESS

NOTES:
1. THE CONTRACTOR SHALL NOT DAMAGE, OBSTRUCT, OR ALTER EXISTING NAVAIDS.
2. THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH THE ATCT AND YIELD TO ANY AIRCRAFT WHEN DIRECTED BY THE ATCT.
3. THE CONTRACTOR SHALL SETUP BARRICADES AROUND THE AFFECTED AREAS OF WORK THROUGH OUT THE PHASE.
4. THE CONTRACTOR MUST COORDINATE WITH ITO TO RELOCATE ANY AIRCRAFT THAT USUALLY PARK IN AND AROUND THE WORK AREA.
5. THE CONTRACTOR SHALL ENSURE THE ACCESS ROAD REMAINS OPEN THROUGHOUT THE ENTIRETY OF CONSTRUCTION.

RUNWAY 8–26 & ASSOCIATED TAXIWAYS
RUNWAY SAFETY AREA (RSA): 500 FT.
RUNWAY OBJECT FREE AREA (ROFA): 800 FT.
TAXIWAY SAFETY AREA (TSA): 214 FT.
TAXIWAY OBJECT FREE AREA (TOFA): 320 FT.

RUNWAY 3–21 & ASSOCIATED TAXIWAYS
RUNWAY SAFETY AREA (RSA): 150 FT.
RUNWAY OBJECT FREE AREA (ROFA): 500 FT.
TAXIWAY SAFETY AREA (TSA): 214 FT.
TAXIWAY OBJECT FREE AREA (TOFA): 320 FT.

LEGEND:
- PROJECT WORK AREA
- HAUL ROUTE
- STAGING/STOCK PILE AREA
- AIRCRAFT TRAVEL ROUTE
- LOW PROFILE BARRICADES

STATE OF HAWAII 1959

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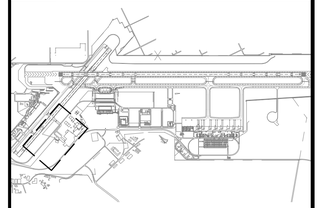

NO.	DATE	REVISIONS

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AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

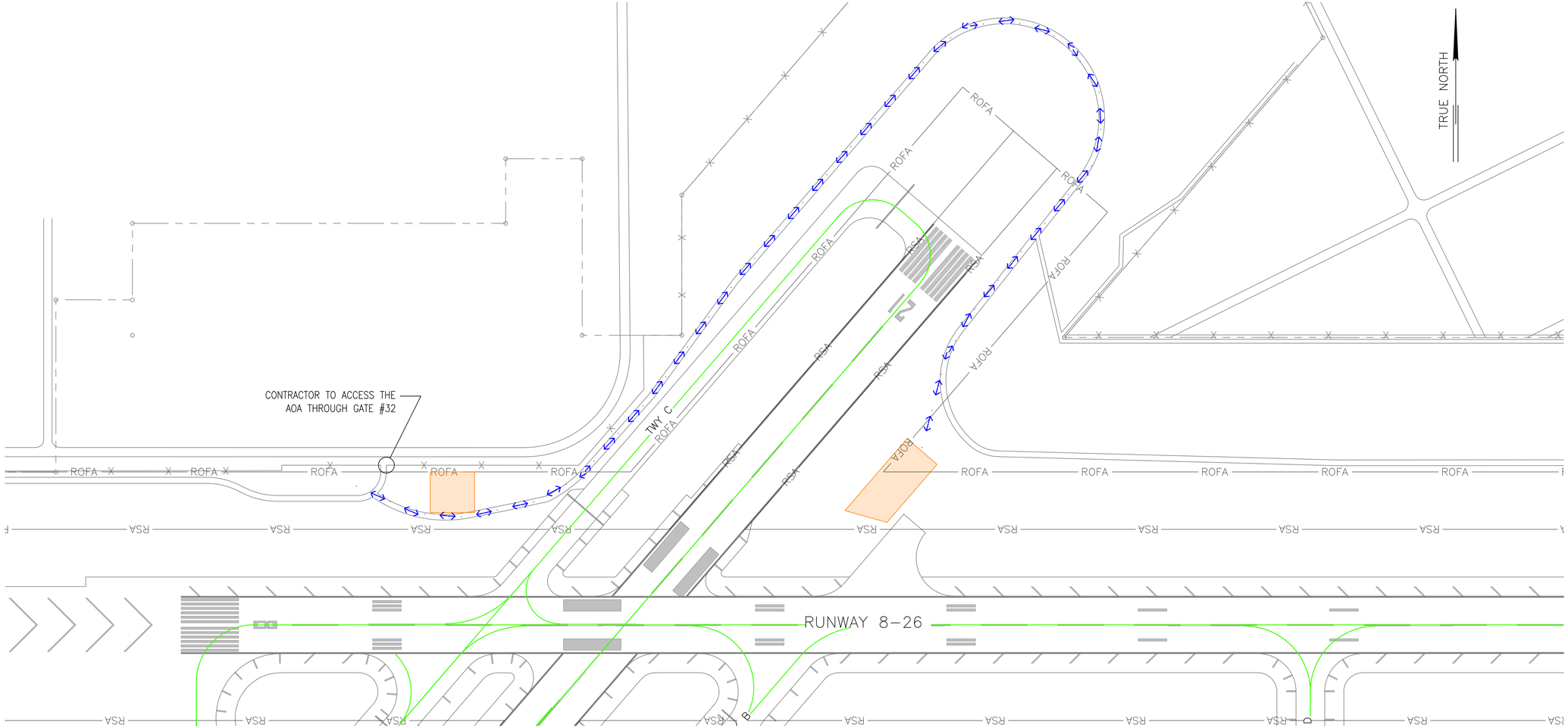
AH1021-20

SHEET TITLE:

CSPP - PHASE 4

DATE :
OCTOBER 2022
SHEET :
7 OF 50 SHEETS

DWG. NO.
G-7



ITO DRAINAGE IMPROVEMENTS – PHASE 5
SCALE: 1"=150'

PHASING AND BARRICADE PLAN – PHASE 5

DESCRIPTION:
1. DEMOLITION AND RELOCATION OF THE RUNWAY 8 SUPPLEMENTAL WIND CONE AND DEMOLITION OF SEGMENTED CIRCLE.
2. DEMOLITION AND RELOCATION OF THE RUNWAY 21 SUPPLEMENTAL WIND CONE AND INSTALLATION OF NEW SEGMENTED CIRCLE.

TYPE:
WORK IN PROGRESS

DURATION:
28 CALENDAR DAYS

WORKING HOURS:
0600 TO 1600 HOURS, HST

SCHEDULED DATES:
TBD

REQUIRED NOTAMS:
1. RUNWAY 3–21 WORK IN PROGRESS
2. RUNWAY 8–26 WORK IN PROGRESS
3. TAXIWAY C WORK IN PROGRESS
4. NOTAMs FOR TALL EQUIPMENT (WHEN APPLICABLE)

NOTES:
1. THE CONTRACTOR SHALL NOT DAMAGE, OBSTRUCT, OR ALTER EXISTING NAVAIDS.
2. THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH THE ATCT AND YIELD TO ANY AIRCRAFT WHEN DIRECTED BY THE ATCT.
3. THERE SHALL BE AN OPERATIONAL WIND CONE AVAILABLE AT THE RUNWAY 8 AND RUNWAY 21 ENDS AT ALL TIMES.
4. THE CONTRACTOR SHALL COORDINATE WITH ITO, HCF, AND SOC TO VERIFY EXISTING UNDERGROUND UTILITIES AND REQUIRED OUTAGES.
5. THE CONTRACTOR SHALL ENSURE ALL APPLICABLE FAA FORM 7460–1 FOR TEMPORARY CONSTRUCTION VEHICLES ARE SUBMITTED AND APPROVED PRIOR TO THE START OF WORK.

RUNWAY 8–26 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	500 FT.
RUNWAY OBJECT FREE AREA (ROFA):	800 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

RUNWAY 3–21 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	150 FT.
RUNWAY OBJECT FREE AREA (ROFA):	500 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

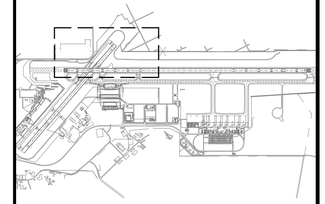
LEGEND:
- PROJECT WORK AREA
- HAUL ROUTE
- STAGING/STOCK PILE AREA
- AIRCRAFT TRAVEL ROUTE
- LOW PROFILE BARRICADES

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

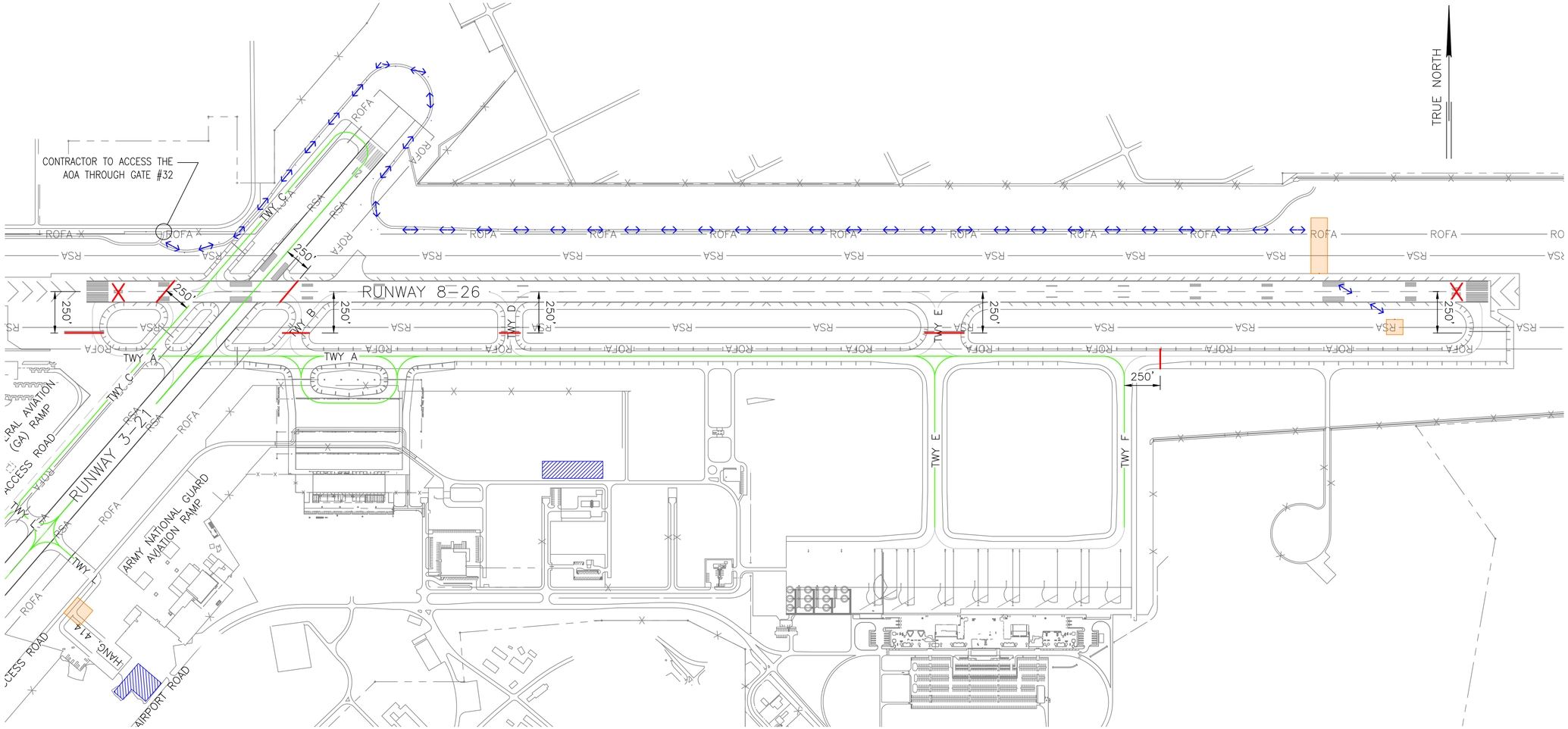
SHEET TITLE:

CSPP - PHASE 5

DATE :
OCTOBER 2022

SHEET :
8 OF 50 SHEETS

DWG. NO.
G-8



ITO DRAINAGE IMPROVEMENTS – PHASE 6
SCALE: 1"=400'

PHASING AND BARRICADE PLAN – PHASE 6

DESCRIPTION:
1. DEMOLITION AND RELOCATION OF THE RUNWAY 26 SUPPLEMENTAL WIND CONE.

TYPE:
WORK IN PROGRESS

DURATION:
28 CALENDAR DAYS

WORKING HOURS:
2100 TO 0600 HOURS, HST

SCHEDULED DATES:
TBD

REQUIRED NOTAMS:
1. RUNWAY 8–26 CLOSED
2. TAXIWAY A CLOSED EAST OF TAXIWAY F
3. TAXIWAY A CLOSED WEST OF TAXIWAY C
4. TAXIWAY B CLOSED
5. TAXIWAY D CLOSED
6. TAXIWAY E CLOSED NORTH OF TAXIWAY A
7. RUNWAY 8–26 GLIDE SLOPE OTS (2100–0600 HST)
8. RUNWAY 8–26 VASI OTS (2100–0600 HST)
9. RUNWAY 8–26 LOC OTS (2100–0600 HST)
10. RUNWAY 8–26 DME OTS (2100–0600 HST)
11. NOTAMs FOR TALL EQUIPMENT WHEN APPLICABLE

NOTES:
1. THE CONTRACTOR SHALL NOT DAMAGE, OBSTRUCT, OR ALTER EXISTING NAVAIDS.
2. THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH THE ATCT AND YIELD TO ANY AIRCRAFT WHEN DIRECTED BY THE ATCT.
3. THERE SHALL BE AN OPERATIONAL WIND CONE AVAILABLE AT THE RUNWAY 26 END AT ALL TIMES.
4. THE CONTRACTOR SHALL COORDINATE WITH ITO, HCF, AND SOC TO VERIFY EXISTING UNDERGROUND UTILITIES AND REQUIRED OUTAGES.

NOTES (CONT.):
5. PRIOR TO THE CLOSURE OF RUNWAY 8–26 THE CONTRACTOR SHALL COORDINATE WITH ITO TO ENSURE ALL UPDATED POSTINGS FOR RUNWAY 3–21 ARE ISSUED.
6. THE CONTRACTOR SHALL ENSURE ALL APPLICABLE FAA FORM 7460–1 FOR TEMPORARY CONSTRUCTION VEHICLES ARE SUBMITTED AND APPROVED PRIOR TO THE START OF WORK.

RUNWAY 8–26 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	500 FT.
RUNWAY OBJECT FREE AREA (ROFA):	800 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

RUNWAY 3–21 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	150 FT.
RUNWAY OBJECT FREE AREA (ROFA):	500 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

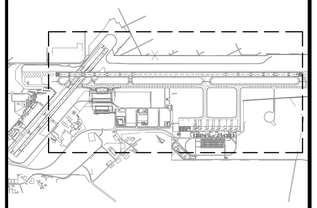
LEGEND:
- PROJECT WORK AREA
- HAUL ROUTE
- STAGING/STOCK PILE AREA
- AIRCRAFT TRAVEL ROUTE
- LOW PROFILE BARRICADES
- X — LIGHTED "X"

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

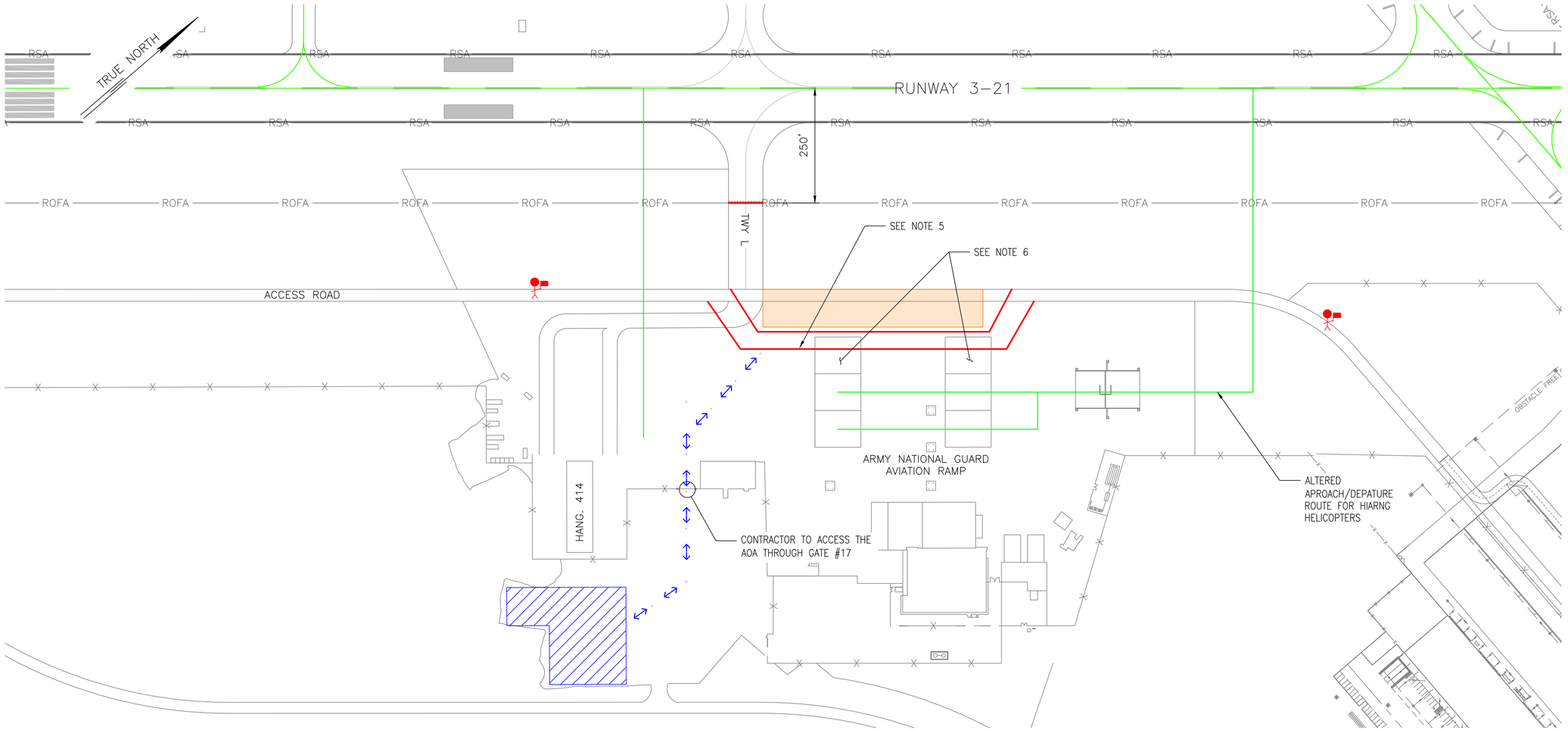
PROJECT NO.:

AH1021-20

SHEET TITLE:

CSPP - PHASE 6

DATE :	DWG. NO.
OCTOBER 2022	G-9
SHEET :	
9 OF 50 SHEETS	



ITO DRAINAGE IMPROVEMENTS – PHASE 7
SCALE: 1"=125'

PHASING AND BARRICADE PLAN – PHASE 7

DESCRIPTION:
1. ASPHALT PAVEMENT MILL AND REPLACEMENT.

TYPE:
TAXIWAY CLOSURE

DURATION:
7 CALENDAR DAYS

WORKING HOURS:
0600 TO 1600 HOURS, HST

SCHEDULED DATES:
TBD

REQUIRED NOTAMS:
1. TAXIWAY L CLOSED
2. ARMY NATIONAL GUARD AVIATION RAMP WORK IN PROGRESS

NOTES:
1. THE CONTRACTOR SHALL NOT DAMAGE, OBSTRUCT, OR ALTER EXISTING NAVAIDS.
2. THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH THE ATCT AND YIELD TO ANY AIRCRAFT WHEN DIRECTED BY THE ATCT.
3. THE CONTRACTOR SHALL SETUP BARRICADES AROUND THE AFFECTED AREAS OF WORK THROUGH OUT THE PHASE.
4. THE CONTRACTOR MUST COORDINATE WITH ITO TO RELOCATE ANY AIRCRAFT THAT USUALLY PARK IN AND AROUND THE WORK AREA.
5. THE CONTRACTOR SHALL DELINEATE A DETOUR ROUTE FOR THE PORTION OF THE ACCESS ROAD AFFECTED BY CONSTRUCTION.
6. COORDINATE WITH THE ARMY NATIONAL GUARD TO TEMPORARILY CLOSE HELIPADS CLOSEST TO WORK AREA AND ALTER APPROACH/DEPARTURE ROUTES AS NEEDED.
7. THE CONTRACTOR SHALL STATION FLAG MEN AS INDICATED ON THE PLANS. FLAG MEN SHALL MONITOR THE GROUND RADIO FREQUENCY AND CONTROL VEHICLE TRAFFIC ON THE VEHICLE SERVICE ROAD TO YIELD FOR ALL AIRCRAFT OPERATIONS. FLAG MEN SHALL BE TRAINED BY ITO TO MONITOR THE RADIO FREQUENCY AND BE FAMILIAR WITH THE HIARNG OPERATIONS PRIOR TO THE START OF THE PHASE.
8. DUE TO THE FACT THAT AIRCRAFT ALWAYS HAVE THE RIGHT–OF–WAY OVER VEHICLES, THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH ATCT AND YIELD TO ANY AIRCRAFT UNLESS ADVISED OTHERWISE BY ATC.

RUNWAY 8–26 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	500 FT.
RUNWAY OBJECT FREE AREA (ROFA):	800 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

RUNWAY 3–21 & ASSOCIATED TAXIWAYS

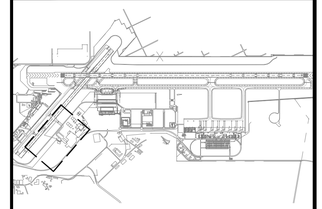
RUNWAY SAFETY AREA (RSA):	150 FT.
RUNWAY OBJECT FREE AREA (ROFA):	500 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

LEGEND:
- FLAG MAN
- PROJECT WORK AREA
- HAUL ROUTE
- STAGING/STOCK PILE AREA
- AIRCRAFT TRAVEL ROUTE
- LOW PROFILE BARRICADES

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

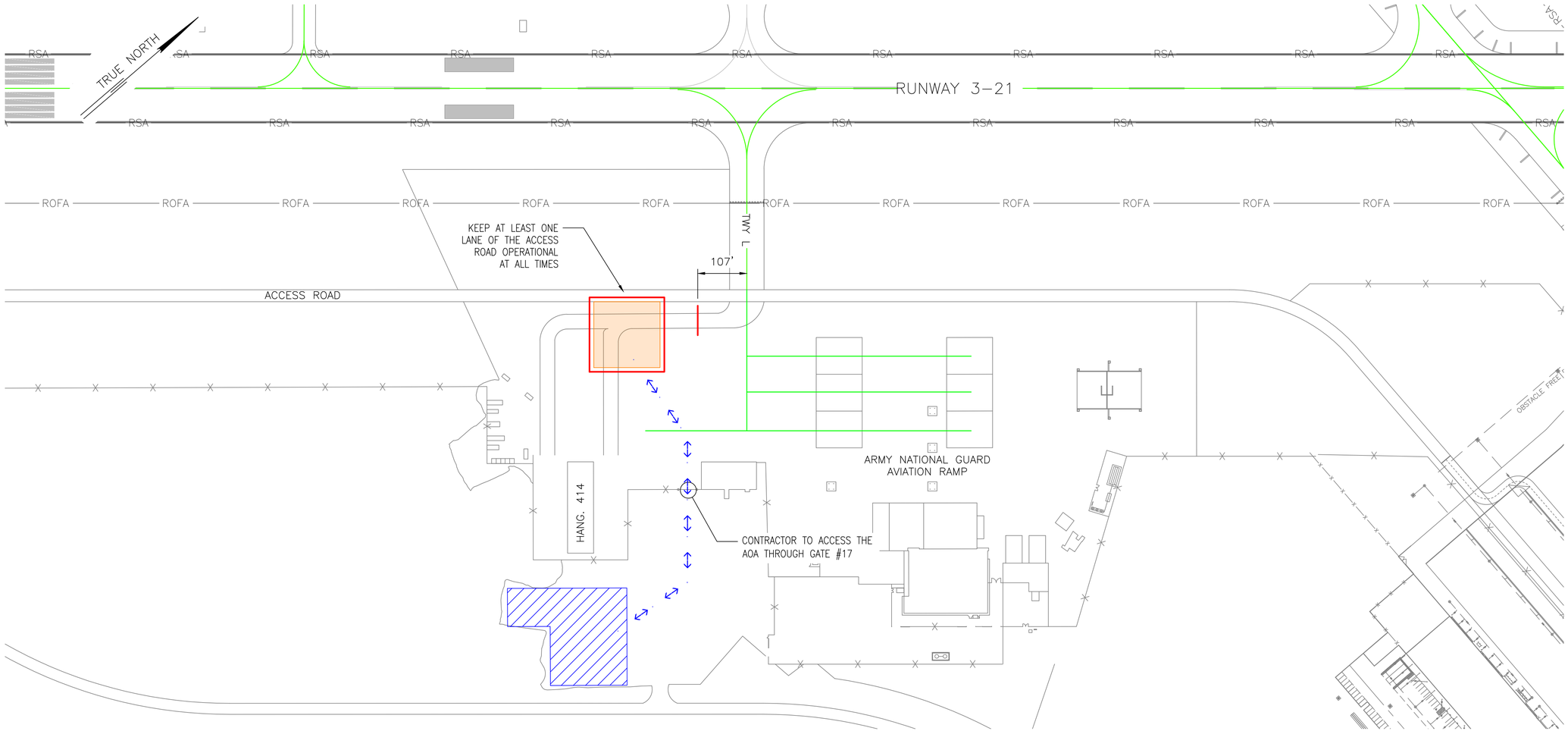
PROJECT NO.:

AH1021-20

SHEET TITLE:

CSPP - PHASE 7

DATE :	DWG. NO.
OCTOBER 2022	G-10
SHEET :	
10 OF 50 SHEETS	



ITO DRAINAGE IMPROVEMENTS – PHASE 8
SCALE: 1"=125'

PHASING AND BARRICADE PLAN – PHASE 8

DESCRIPTION:
1. ASPHALT PAVEMENT MILL AND REPLACEMENT.

TYPE:
TAXIWAY CLOSURE

DURATION:
7 CALENDAR DAYS

WORKING HOURS:
0600 TO 1600 HOURS, HST

SCHEDULED DATES:
TBD

REQUIRED NOTAMS:
1. ARMY NATIONAL GUARD AVIATION RAMP WORK IN PROGRESS

NOTES:
1. THE CONTRACTOR SHALL NOT DAMAGE, OBSTRUCT, OR ALTER EXISTING NAVAIDS.
2. THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH THE ATCT AND YIELD TO ANY AIRCRAFT WHEN DIRECTED BY THE ATCT.
3. THE CONTRACTOR SHALL SETUP BARRICADES AROUND THE AFFECTED AREAS OF WORK THROUGH OUT THE PHASE.
4. THE CONTRACTOR MUST COORDINATE WITH ITO TO RELOCATE ANY AIRCRAFT THAT USUALLY PARK IN AND AROUND THE WORK AREA
5. HELICOPTER TOUR GROUPS OPERATE OUT OF BUILDING 414. THE CONTRACTOR SHALL YIELD TO ANY HELICOPTERS AIR TAXIING TO OR FROM BUILDING 414.
6. DUE TO THE FACT THAT AIRCRAFT ALWAYS HAVE THE RIGHT–OF–WAY OVER VEHICLES, THE CONTRACTOR SHALL MAINTAIN AN OPEN CHANNEL OF COMMUNICATION WITH ATCT AND YIELD TO ANY AIRCRAFT UNLESS ADVISED OTHERWISE BY ATC.

RUNWAY 8–26 & ASSOCIATED TAXIWAYS

RUNWAY SAFETY AREA (RSA):	500 FT.
RUNWAY OBJECT FREE AREA (ROFA):	800 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

RUNWAY 3–21 & ASSOCIATED TAXIWAYS

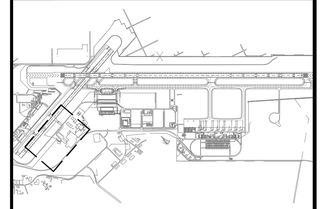
RUNWAY SAFETY AREA (RSA):	150 FT.
RUNWAY OBJECT FREE AREA (ROFA):	500 FT.
TAXIWAY SAFETY AREA (TSA):	214 FT.
TAXIWAY OBJECT FREE AREA (TOFA):	320 FT.

LEGEND:
- FLAG MAN
- PROJECT WORK AREA
- HAUL ROUTE
- STAGING/STOCK PILE AREA
- AIRCRAFT TRAVEL ROUTE
- LOW PROFILE BARRICADES

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

SHEET TITLE:

CSPP - PHASE 8

DATE :
OCTOBER 2022
SHEET :
11 OF 50 SHEETS

DWG. NO.
G-11

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLETE ALL REQUIREMENTS STATED IN THE CONTRACT.
2. THE CONTRACTOR'S NORMAL WORKING HOURS SHALL BE IN ACCORDANCE WITH TECHNICAL PROVISION SECTION 01000 AND THE HOURS STATED IN THE CONSTRUCTION SAFETY AND PHASING PLAN. NO WORK WILL BE PERFORMED ON STATE HOLIDAYS, AIRPORT EMERGENCIES, OR WHEN POOR WEATHER RESTRICTS CONSTRUCTION.
3. TO ENSURE PUBLIC AND WORKER SAFETY ON THIS PROJECT, THE STATE WILL NOT ALLOW ANY WORK TO COMMENCE UNTIL THE CONTRACTOR'S DETAILED PROJECT WORK SCHEDULE IS APPROVED BY THE STATE PROJECT MANAGER. SAID SCHEDULE SHALL PICTORIALLY SHOW THE WORK AREA(S) FOR EACH WORKDAY. THE CONTRACTOR SHALL KEEP ALL PERSONNEL AND EQUIPMENT UNDER ITS JURISDICTION WITHIN THE WORK AREA(S) AND ASSIGNED AIRPORT OPERATIONS AREA (AOA) TRAVEL ROUTE(S).
4. THE CONTRACTOR SHALL OBTAIN A REVOCABLE PERMIT FOR A STAGING AREA ON AIRPORT PROPERTY PER SPECIFICATION SECTION 01000 – DESCRIPTION OF WORK. THE CONTRACTOR SHALL STAGE THEIR EQUIPMENT ONLY AT STATE DESIGNATED LOCATIONS AND SHALL COMPLY WITH ALL ASSOCIATED REQUIREMENTS. THE STAGING AREA(S) WILL BE DETERMINED BY THE AIRPORT OPERATION DISTRICT OFFICE.
5. THE CONTRACTOR SHALL ONLY ENTER AND EXIT THE AOA THROUGH STATE ASSIGNED GATES AS CALLED OUT IN THE CONSTRUCTION SAFETY AND PHASING PLAN.
6. THE CONTRACTOR MAY NOT USE TEMPORARY AOA BADGES/PERMITS. THESE ITEMS WILL ONLY BE ISSUED BY THE STATE DURING STATE EMERGENCIES.
7. THE CONTRACTOR SHALL CLEAN UP MATERIAL SPILLS BY THE END OF EACH WORK DAY AND/OR WHENEVER THEY OCCUR AND SHALL ONLY DISCARD EXCESS CUT AT AREAS DESIGNATED BY THE STATE.
8. THE CONSTRUCTION STAGING AND MATERIAL STOCKPILING AREAS ARE SHOWN IN THE CONSTRUCTION SAFETY AND PHASING PLAN.
9. THE CONTRACTOR SHALL FILL OUT AND SUBMIT FAA FORM 7460–1 FOR ALL VEHICLES AND EQUIPMENT, 25' OR TALLER, TO BE INSIDE THE AOA. THE FORM 7460–1 SHALL BE APPROVED BEFORE THE START OF CONSTRUCTION.
10. PRIOR TO THE START OF WORK THE CONTRACTOR SHALL SIGN THE HDOTA "PERMIT TO DISCHARGE INTO THE STATE AIRPORT DRAINAGE SYSTEM RELATING TO CONSTRUCTION PROJECTS" FORM. THE PERMIT HAS BEEN PREPARED BY THE DESIGNER, BUT THE CONTRACTOR MAY MAKE REVISIONS PRIOR TO SIGNING. ANY AND ALL REVISIONS MADE TO THE PERMIT BY THE CONTRACTOR SHALL BE REVIEWED AND APPROVED BY THE HDOTA ENVIRONMENTAL SECTION (AIR–EE) PRIOR TO IMPLEMENTATION.
11. THE CONTRACTOR SHALL HAVE AT LEAST TWO (2) PEOPLE IN THE AOA POSSESSING AND CONTINUOUSLY MONITORING THE FOLLOWING FULLY CHARGED COMMUNICATION DEVICES:
    a. A TWO–WAY RADIO CAPABLE OF COMMUNICATING ON FREQUENCIES 121.9 (GROUND) AND 118.1 (TOWER).
    b. A CELLULAR TELEPHONE, WITH A LISTING OF ALL REQUIRED EMERGENCY CONTACT NUMBERS.
12. PER AC 150/5345–27E, THE CONTRACTOR SHALL SUPPLY THE AIRPORT DISTRICT MAINTENANCE DEPARTMENT WITH:
    a. A COMPLETE WIRING DIAGRAM FOR LIGHTED WIND CONES, RUNWAY EDGE LIGHTS, AND TAXIWAY EDGE LIGHTS.
    b. A COMPLETE PARTS LIST WITH THE NAME, PART NUMBER, LOCAL REPRESENTATIVE AND/OR DISTRIBUTOR, AND COMPANY REP CONTACT INFORMATION OF THE ORIGINAL MANUFACTURER.
    c. ASSEMBLY AND INSTALLATION INSTRUCTIONS, INCLUDING MOUNTING FOUNDATION AND ANCHOR BOLT REQUIREMENTS.
    d. MAINTENANCE INSTRUCTIONS
13. THE CONTRACTOR SHALL COMPLY WITH THE HDOTA ITO SWMPP AND HDOTA'S CONSTRUCTION ACTIVITIES BMP FIELD MANUAL FOR THE ENTIRETY OF THE PROJECT.

AOA TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL FURNISH ALL ESCORTS, FLAG PEOPLE, AND COMMUNICATION DEVICES SPECIFIED IN THE TECHNICAL PROVISION SECTION 01800 AND SECTION 01533; AS WELL AS ALL AOA TRAFFIC CONTROL DEVICES SPECIFIED IN THE TECHNICAL PROVISION SECTION 01800.
2. THE CONTRACTOR'S ESCORTS SHALL CONTINUOUSLY MONITOR RADIO FREQUENCY, INDICATED IN THE TECHNICAL PROVISION SECTION 01800, FOR ALL POTENTIAL AIRCRAFT ACTIVITY THAT IS UNPLANNED AND UNFORESEEN WHEN WORKING WITHIN THE AOA.
3. BEFORE STARTING ANY WORK AT EACH WORKDAY, THE CONTRACTOR SHALL SET UP ALL AOA TRAFFIC CONTROL DEVICES IN THE ORDER REQUIRED BY THE CSPP. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL TAKE DOWN ALL AOA TRAFFIC CONTROL DEVICES IN THE REVERSE ORDER.
4. THE CONTRACTOR SHALL NOT TAKE DOWN ANY AOA TRAFFIC CONTROL DEVICES UNTIL WORK IS COMPLETED ON THE AOA OR AS OTHERWISE DIRECTED BY ATCT OR AIRPORT DISTRICT OPERATIONS.
5. THE CONTRACTOR SHALL NOT LEAVE THE AOA UNTIL ALL AOA TRAFFIC CONTROL DEVICES HAVE BEEN TAKEN DOWN.
6. THE CONTRACTOR SHALL NOT LEAVE THE AIRPORT UNTIL ALL STAGING AREAS ARE CLEARED ACCORDING TO TECHNICAL PROVISION SECTION 01800.

INSTRUMENT LANDING SYSTEM (ILS) AND NAVIGATIONAL AID (NAVAID) NOTES:

1. THE CONTRACTOR SHALL NOT PARK IN THE RUNWAY 26 GLIDE SLOPE CRITICAL AREA.
2. THE CONTRACTOR SHALL NOT OBSTRUCT, ALTER, OR DAMAGE EXISTING NAVAIDS ON THE AIRFIELD.
3. THE CONTRACTOR SHALL COORDINATE WITH ITO TO TURN OFF ALL REQUIRED NAVAIDS PRIOR TO THE SHUTDOWN OF THE RUNWAY.

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) NOTES:

1. THE CSPP IS A SAFETY DOCUMENT APPROVED BY HDOTA, AIRPORT DISTRICT, FAA, ATC, AIRLINES, AND OTHER STAKEHOLDERS.
2. THE CONTRACTOR SHALL ADHEAR TO THE PROJECT PHASING, WORK HOURS, HAUL ROUTES, CLOSURES, AND OTHER PROJECT SPECIFIC SAFETY PROCEDURES LISTED IN THE CSPP.
3. THE CONTRACTOR SHALL CREATE A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) IN ACCORDANCE WITH THE MOST UP TO DATE FAA AC 150/5370–2 OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, TO DETAIL HOW THE CONTRACTOR WILL COMPLY WITH THE CSPP.
4. THE CONTRACTOR SHALL BE AWARE OF THE HAZARDS, RISKS, AND MITIGATION MEASURES IDENTIFIED IN THE SAFETY RISK MANAGEMENT DOCUMENT AND CSPP.

WATER POLLUTION AND EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP) NOTES:

1. THE CONTRACTOR SHALL INSTALL DEVICES AND UTILIZE BEST MANAGEMENT PRACTICES (BMP) APPROPRIATE FOR THE PROJECT. THE CONTRACTOR SHALL REFERENCE THE STATE OF HAWAII DEPARTMENT OF TRANSPORTATION, AIRPORTS DIVISION'S STORM WATER MANAGEMENT PROGRAM PLAN (SWMPP) FOR RULES RELATING TO SOIL EROSION STANDARDS AND GUIDELINES.
2. THE CONTRACTOR SHALL ADHERE TO THE BEST MANAGEMENT PRACTICES SPECIFIED IN THE HDOTA CONSTRUCTION ACTIVITIES BMP FIELD MANUAL ATTACHED IN THE PROJECT SPECIFICATIONS, SECTION 01561 – CONSTRUCTION SITE RUNOFF CONTROL PROGRAM.
3. THE CONTRACTOR SHALL CONSIDER AND INSTALL BMP MEASURES WHICH TAKE INTO ACCOUNT HIGH INTENSITY AND PROLONGED RAINFALL, AND TO ADDRESS THE POTENTIAL PROBLEMS THAT MAY RESULT BEFORE THE START OF ANY EXCAVATION OR EMBANKMENT WORK.
4. THE STATE RESERVES THE RIGHT TO DETERMINE THE APPROPRIATENESS AND ADEQUACY OF PROPOSED AND/OR IMPLEMENTED BMP'S. ADDITIONAL BMP MEASURES REQUIRED BY THE STATE SHALL NOT BE PAID FOR BY THE STATE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES, INJURIES AND/OR CLAIMS RESULTING FROM HIS BMP'S.
6. THE CONTRACTOR SHALL DESIGNATE AT LEAST ONE (1) PERSON WHO WILL BE RESPONSIBLE FOR INSPECTION, MAINTENANCE, AND REPAIR ACTIVITIES. PERSONNEL SELECTED FOR THE INSPECTION AND MAINTENANCE RESPONSIBILITIES SHALL RECEIVE TRAINING FROM THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE. TRAINING SHALL INCLUDE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR MINIMIZING EROSION AND SEDIMENT AND FOR RETAINING SEDIMENT ON–SITE.
7. DISCHARGES INTO STATE WATERS DUE TO DEWATERING AND/OR HYDROTESTING ACTIVITIES REQUIRE SEPARATE NPDES PERMIT(S) FROM THE STATE DEPARTMENT OF HEALTH (DOH). IF THE CONTRACTOR CHOOSES TO DISCHARGE DEWATERING AND/OR HYDROTESTING EFFLUENT INTO STATE WATERS, HE SHALL OBTAIN THE NECESSARY PERMIT(S) FROM THE DOH, AND SHALL SUBMIT A COMPLETE SET OF THE PERMIT TO THE DEPARTMENT OF TRANSPORTATION, AIRPORTS DIVISION PRIOR TO COMMENCING THE PERMITTED ACTIVITY. NO DEWATERING AND/OR HYDROTESTING ACTIVITIES WILL BE AUTHORIZED UNTIL THE RECEIPT OF THE NPDES PERMIT(S) FROM THE DOH. THE CONTRACTOR SHALL SUBMIT THE NOTICE OF INTENT TO AIR–EE FOR REVIEW AND APPROVAL PRIOR TO TRANSMITTING TO DOH.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CITATIONS OR FINES THAT MAY BE LEVIED AS RELATED TO THE NPDES PROGRAM ON THIS PERMIT, WHETHER DIRECTLY LEVIED AGAINST THE CONTRACTOR OR THE DEPARTMENT OF TRANSPORTATION.
9. THE CONTRACTOR MAY DISCUSS PROPOSED AND IMPLEMENTED BMP MEASURES AND THE ADEQUACY OF THEM, WITH THE ENGINEER.

NON–STRUCTURAL BEST MANAGEMENT PRACTICES

1. WASTE DISPOSAL:
    a. ALL WASTE MATERIAL SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED, LEAK PROOF METAL DUMPSTER. THE DUMPSTER SHALL MEET ALL COUNTY AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL DUMPSTERS AT THE PROJECT SITE SHALL BE EMPTIED A MINIMUM OF ONCE PER WEEK, AND MORE OFTEN, IF NECESSARY. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ONSITE. THE CONTRACTOR, AT HIS EXPENSE, SHALL TRAIN SUPERVISORY PERSONNEL IN THE CORRECT PROCEDURES FOR WASTE DISPOSAL.
    b. ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE OR FEDERAL REGULATIONS.
    c. ALL SANITARY WASTE SHALL BE COLLECTED FROM PORTABLE RESTROOM FACILITIES A MINIMUM OF ONCE PER WEEK, AND MORE OFTEN, AS NECESSARY.
2. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:
    a. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY OR PRIOR TO AND AFTER EACH DAY'S CONSTRUCTION.
    b. ALL CONTROL MEASURES PER APPROVED NPDES PLAN, SHALL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN TWENTY FOUR (24) HOURS AFTER THE PROBLEM BEING DISCOVERED.
    c. ANY REVISIONS TO APPROVED NPDES PLANS SHALL BE SUBMITTED TO THE DISTRICT ENGINEER FOR REVIEW AND APPROVAL BEFORE ANY FIELD ADJUSTMENTS ARE MADE. ANY REVISIONS TO APPROVED NPDES PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVED BY AIR–EE BEFORE ANY FIELD ADJUSTMENTS ARE MADE.
3. SPILL PREVENTION:
    a. THE FOLLOWING MANAGEMENT PRACTICES SHALL BE FOLLOWED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIAL AND SUBSTANCES TO STORM WATER RUNOFF AND DISCHARGE.
    i. GOOD HOUSEKEEPING: STORE ENOUGH PRODUCTS AND MATERIAL REQUIRED TO PERFORM THE JOB. MATERIALS THAT MAY BECOME POTENTIAL POLLUTANTS THAT ARE IN A NEAT AND ORDERLY MANNER IN THEIR ORIGINAL CONTAINERS, AND IF POSSIBLE, COVERED OR ENCLOSED. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS, WITH THE ORIGINAL MANUFACTURER'S LABELING. PRODUCTS SHALL NOT BE MIXED, EXCEPT AS RECOMMENDED OR ALLOWED BY THE MANUFACTURERS. APPROPRIATE PRODUCTS SHALL HAVE SECONDARY CONTAINMENT. WHENEVER POSSIBLE, USE UP ALL OF A PRODUCT PRIOR TO DISPOSING OF THE CONTAINER. MANUFACTURER'S DIRECTIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED. MATERIAL SHALL BE DISPOSED OF IN A MANNER PERMITTED BY LOCAL, STATE, OR FEDERAL REGULATIONS. THE CONTRACTOR SHALL CONDUCT DAILY INSPECTIONS TO ENSURE PROPER USE AND DISPOSAL OF MATERIAL. LITTER SHALL BE PICKED UP ON A DAILY BASIS AND DISPOSED OF PROPERLY. DUST SHALL BE CONTROLLED BY WETTING OR BY APPLICATION OF A SOIL BINDER.
    ii. HAZARDOUS PRODUCTS: PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABELING. MATERIAL SAFETY DATA SHEETS (MSDS) SHALL BE RETAINED AND AVAILABLE FOR REVIEW BY USERS. MANUFACTURER'S DIRECTIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED. ALL HAZARDOUS WASTE SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
4. PRODUCT SPECIFIC PRACTICES THE FOLLOWING PRACTICES SHALL BE FOLLOWED ON–SITE:
    a. VEHICLES: ALL ON–SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND SHALL BE SUBJECT TO REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKS OCCURRING. LEAKS THAT CANNOT BE REPAIRED IMMEDIATELY SHALL BE CONTAINED IN SPILL PANS OR OTHER APPROPRIATE CONTAINERS.
    b. PETROLEUM PRODUCTS: PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS THAT SHALL BE CLEARLY LABELED. ASPHALT–CONTAINING MATERIALS (SUCH AS TACK AND PRIME COATS) USED ON–SITE SHALL BE APPLIED ACCORDING TO MANUFACTURER'S DIRECTIONS.
    c. CONCRETE TRUCKS: CONCRETE TRUCKS SHALL DISCHARGE DRUM WASH WATER ONLY AT DESIGNATED SITES. WASH WATER SHALL NOT BE DISCHARGED TO THE STORM DRAIN SYSTEM. THE CONTRACTOR SHALL CONTAIN THE DISCHARGED DRUM WASH AT THE DESIGNATED SITE AND SHALL REMOVE CONCRETE AND OTHER RESIDUE AS REQUIRED BY THE ENGINEER.
5. IN ADDITION TO GOOD HOUSEKEEPING AND MATERIALS FOLLOWING SPILL PREVENTION AND CLEANUP PRACTICES SHALL BE OBSERVED.
    a. FOR ALL SPILLS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE AIRPORT DUTY MANAGER, ENGINEER, AND AIR–EE. THE CONTRACTOR SHALL ALSO NOTIFY DOH HEER OFFICE OF ALL SPILLS GREATER THAN 25 GALLONS OR SPILLS THAT HAVE NOT BEEN CLEANED WITHIN 72 HOURS. THE CONTRACTOR SHALL ALSO NOTIFY DOH CWB OF ANY SPILLS THAT DISCHARGES INTO THE DRAINAGE SYSTEM AND/OR MS4. THE CONTRACTOR SHALL PROVIDE A REPORT THAT INCLUDES, BUT NOT LIMITED TO: THE MEASURES TO PREVENT THIS TYPE OF SPILL, THE CAUSE OF THE SPILL, AND THE CLEAN UP MEASURES UNDERTAKEN FOR THE SPILL.
    b. MANUFACTURER'S RECOMMENDATIONS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED, AND SITE PERSONNEL SHALL BE MADE AWARE OF PROCEDURES AND LOCATION OF CLEANUP SUPPLIES.
    c. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON–SITE
    d. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
    e. ALL SPILL AREAS SHALL BE CONTAINED, WELL VENTILATED, AND CLEANUP PERSONNEL SHALL WEAR APPROPRIATE CLOTHING AND EQUIPMENT.
    f. TOXIC OR HAZARDOUS MATERIAL SPILLS, REGARDLESS OF SIZE, SHALL BE REPORTED TO THE APPROPRIATE GOVERNMENTAL AGENCIES. A REPORT SHALL BE PREPARED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL, THE CAUSE, AND THE CLEANUP MEASURE UNDERTAKEN SHALL ALSO BE INCLUDED IN THE REPORT.
    g. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SPILL PREVENTION AND CLEANUP. HE SHALL DESIGNATE AT LEAST ONE ON–SITE PERSONNEL TO RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THE CONTRACTOR, AT HIS EXPENSE SHALL DO TRAINING. THE NAME OF THIS PERSON SHALL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE ON–SITE OFFICE TRAILER.

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186–C
HAWAII U.S.A.

This work was prepared by me or under my supervision.
Exp. 04–30–24

Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

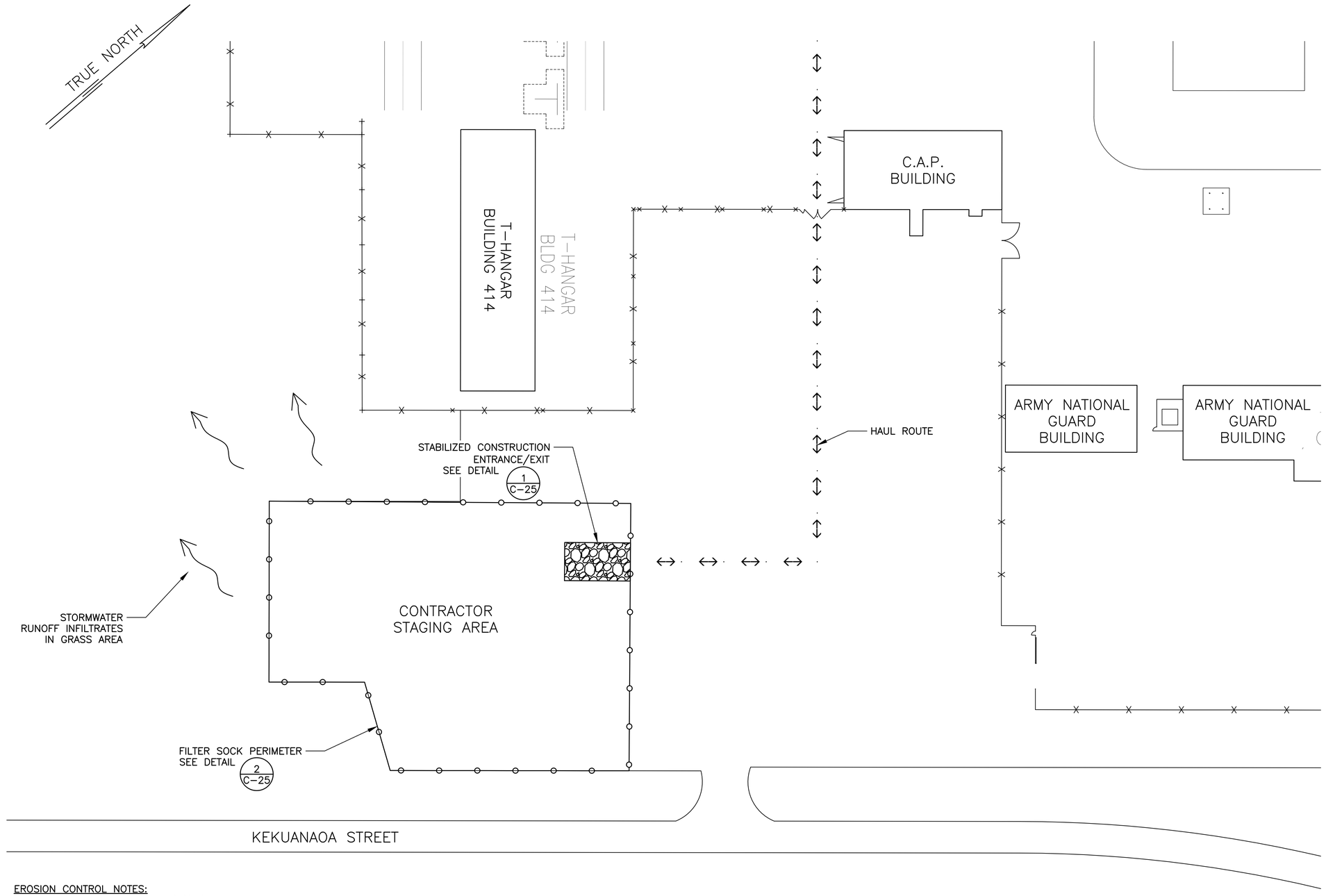
AH1021-20

SHEET TITLE:

NOTES

DATE :
OCTOBER 2022
SHEET :
12 OF 50 SHEETS

DWG. NO.
C-1



EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL VERIFY THE DIRECTION OF STORMWATER RUNOFF FROM THE PROJECT SITE, STAGING AREA, AND STOCKPILE AREA. IF STORMWATER RUNOFF DIRECTIONS ARE FOUND TO DIFFER FROM THE PLANS ADDITIONAL APPROPRIATE BMPS SHALL BE INSTALLED TO ADDRESS THE ACTUAL FLOW PATTERN.

EROSION CONTROL – STAGING AREA
SCALE: 1"=40'

LEGEND:

FLOW PATTERN:

40' 0 40' 80'
GRAPHIC SCALE 1"=40'

Airports Division
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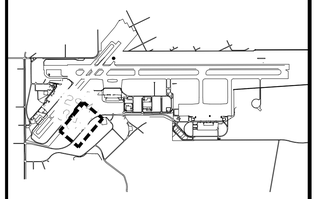


NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

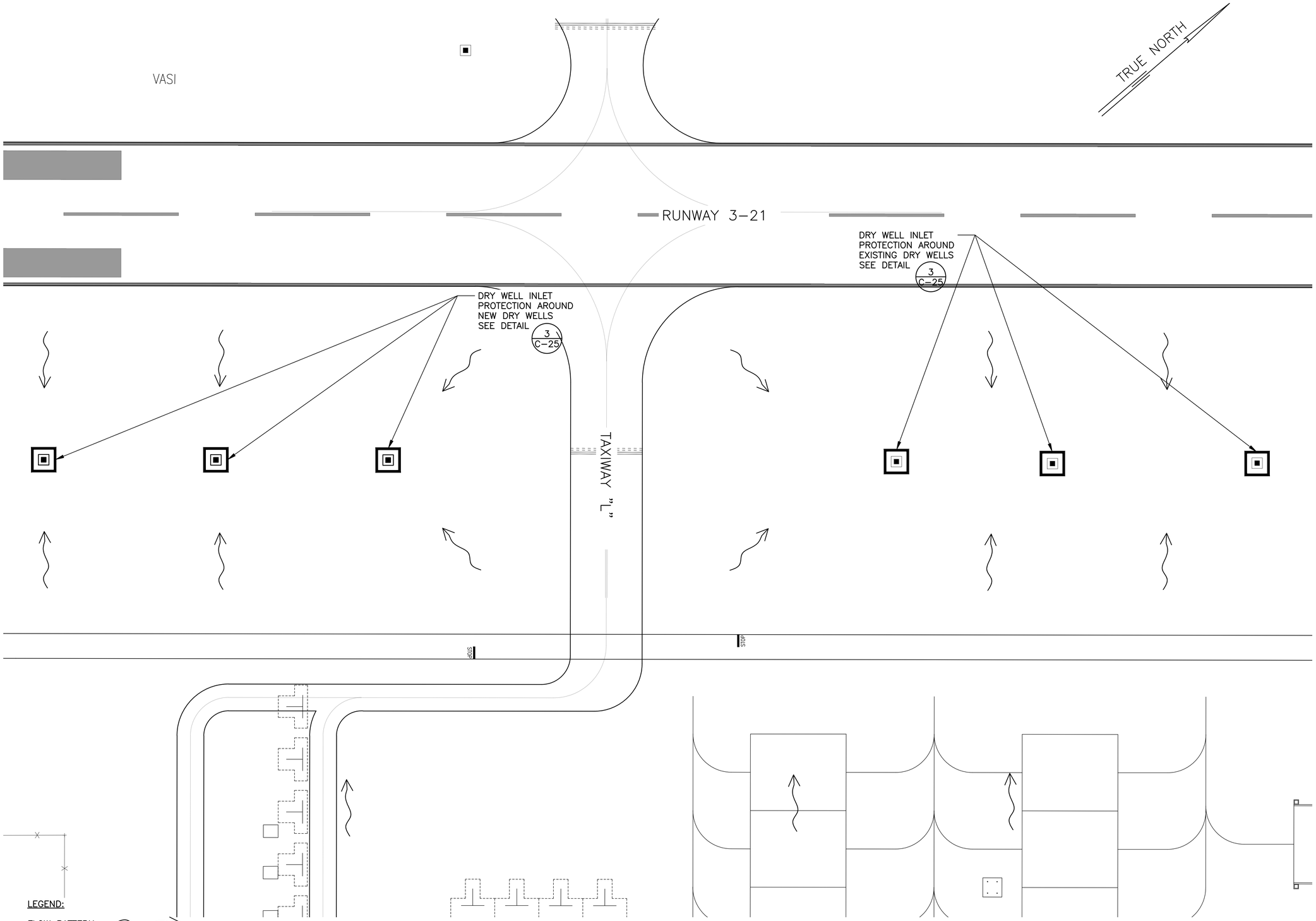
PROJECT NO.:

AH1021-20

SHEET TITLE:

EROSION CONTROL PLAN 1

DATE :	DWG. NO.
OCTOBER 2022	C-2
SHEET :	
13 OF 50 SHEETS	



EROSION CONTROL – ARMY NATIONAL GUARD AVIATION RAMP
SCALE: 1"=50'

40' 0 40' 80'
GRAPHIC SCALE 1"=40'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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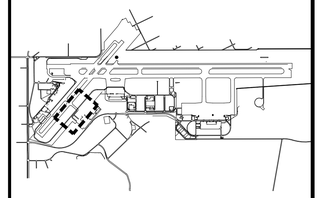
KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

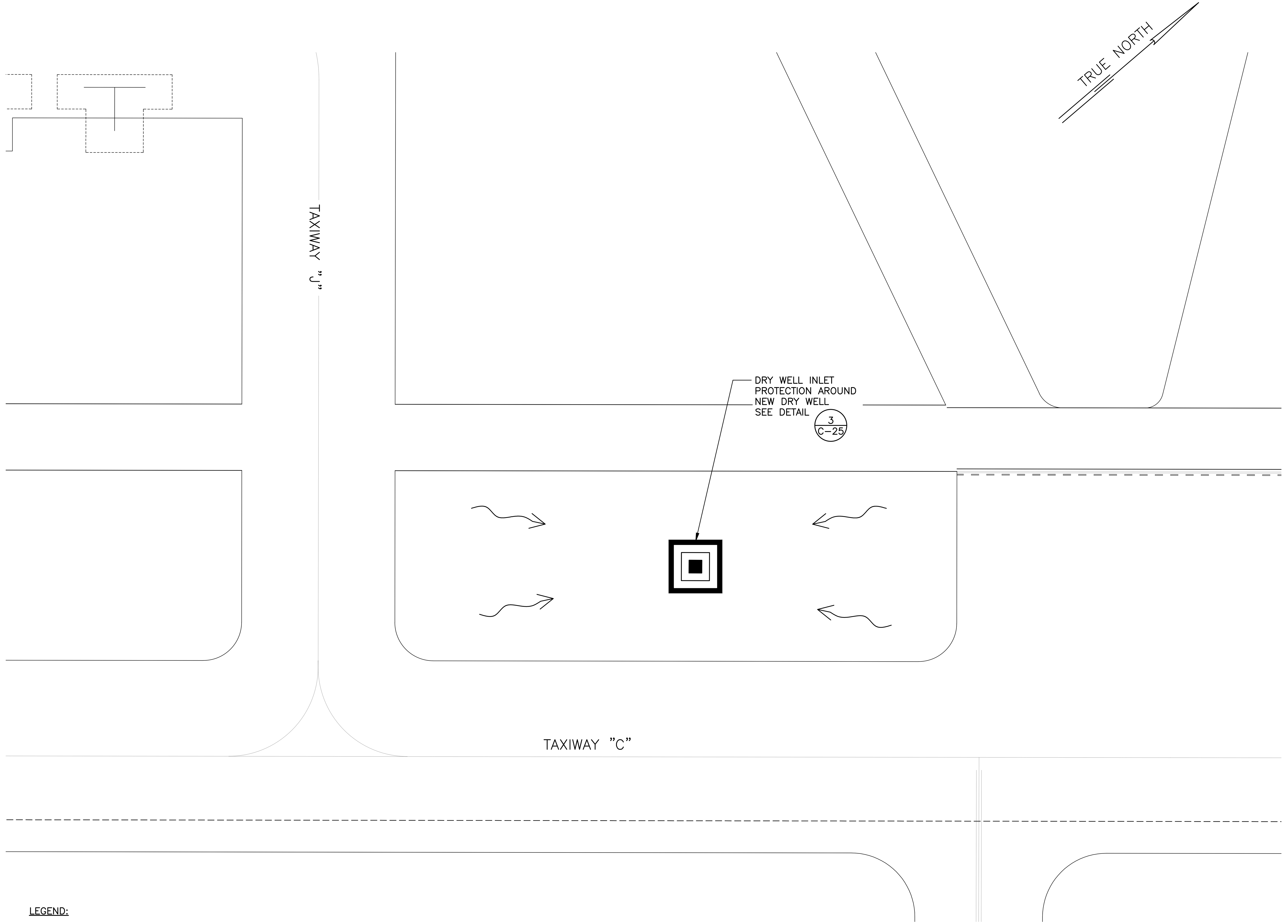
PROJECT NO.:

AH1021-20

SHEET TITLE:

EROSION CONTROL PLAN 2

DATE :	DWG. NO.
OCTOBER 2022	C-3
SHEET :	
14 OF 50 SHEETS	



LEGEND:

FLOW PATTERN:

EROSION CONTROL – TAXIWAY "J" & TAXIWAY "C"

SCALE: 1"=20'

20' 0 20' 40'
GRAPHIC SCALE 1"=20'

Airports Division
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STATE OF HAWAII

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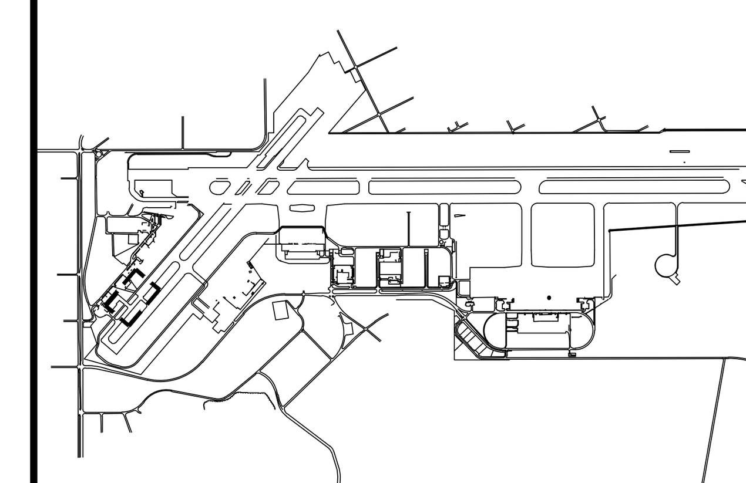
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

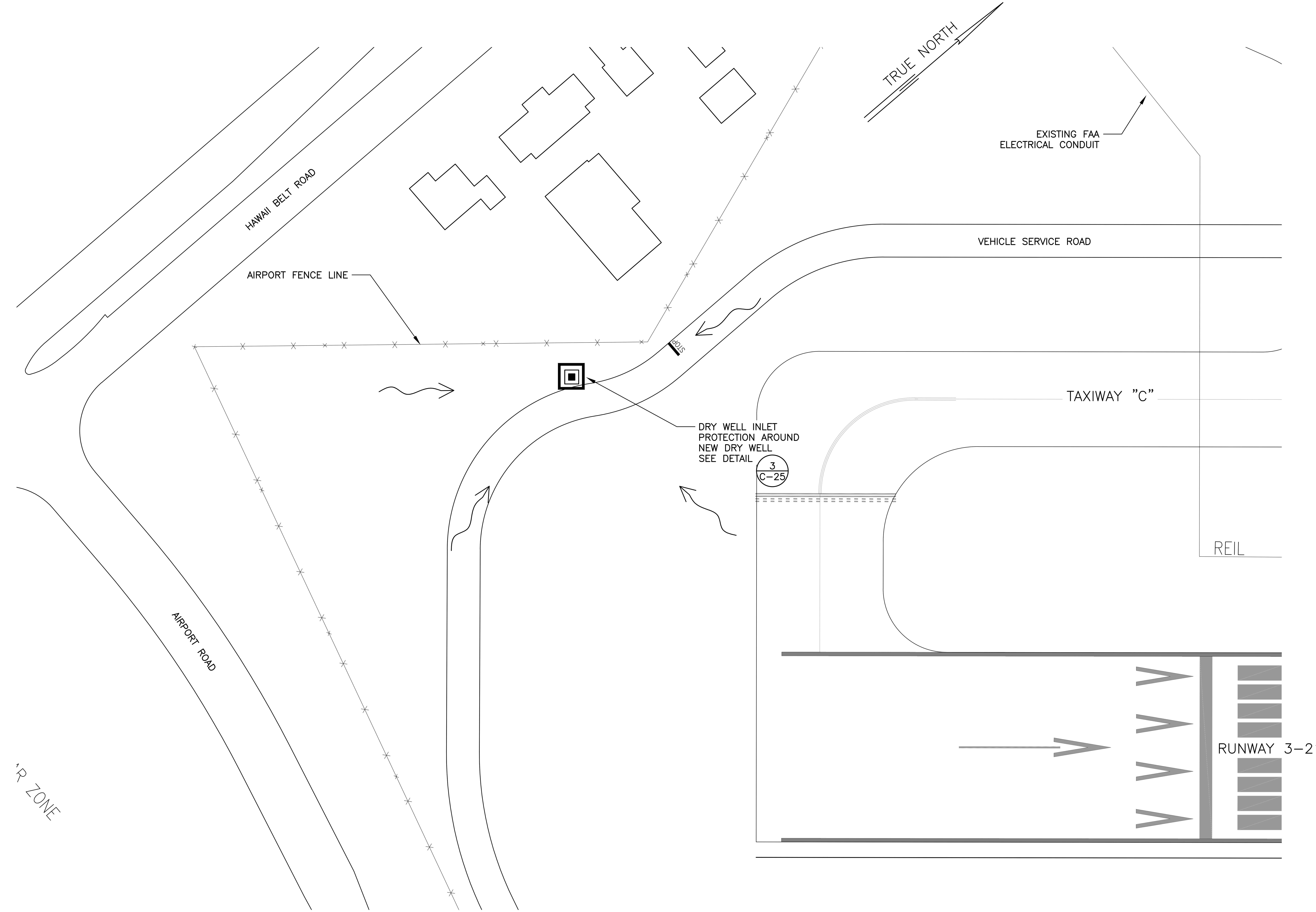
SHEET TITLE:

EROSION CONTROL PLAN 3

DATE :
OCTOBER 2022

SHEET :
15 OF 50 SHEETS

DWG. NO.
C-4



LEGEND:

FLOW PATTERN:

EROSION CONTROL – VEHICLE SERVICE ROAD

SCALE: 1"=40'

40' 0 40' 80'

GRAPHIC SCALE 1"=40'

Airports Division

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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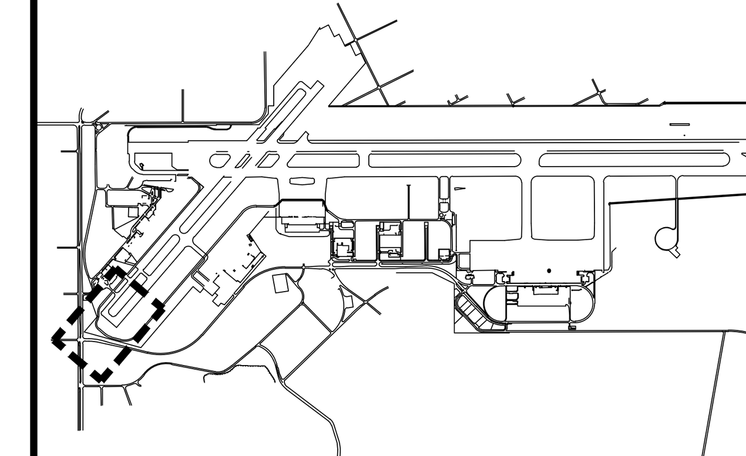
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

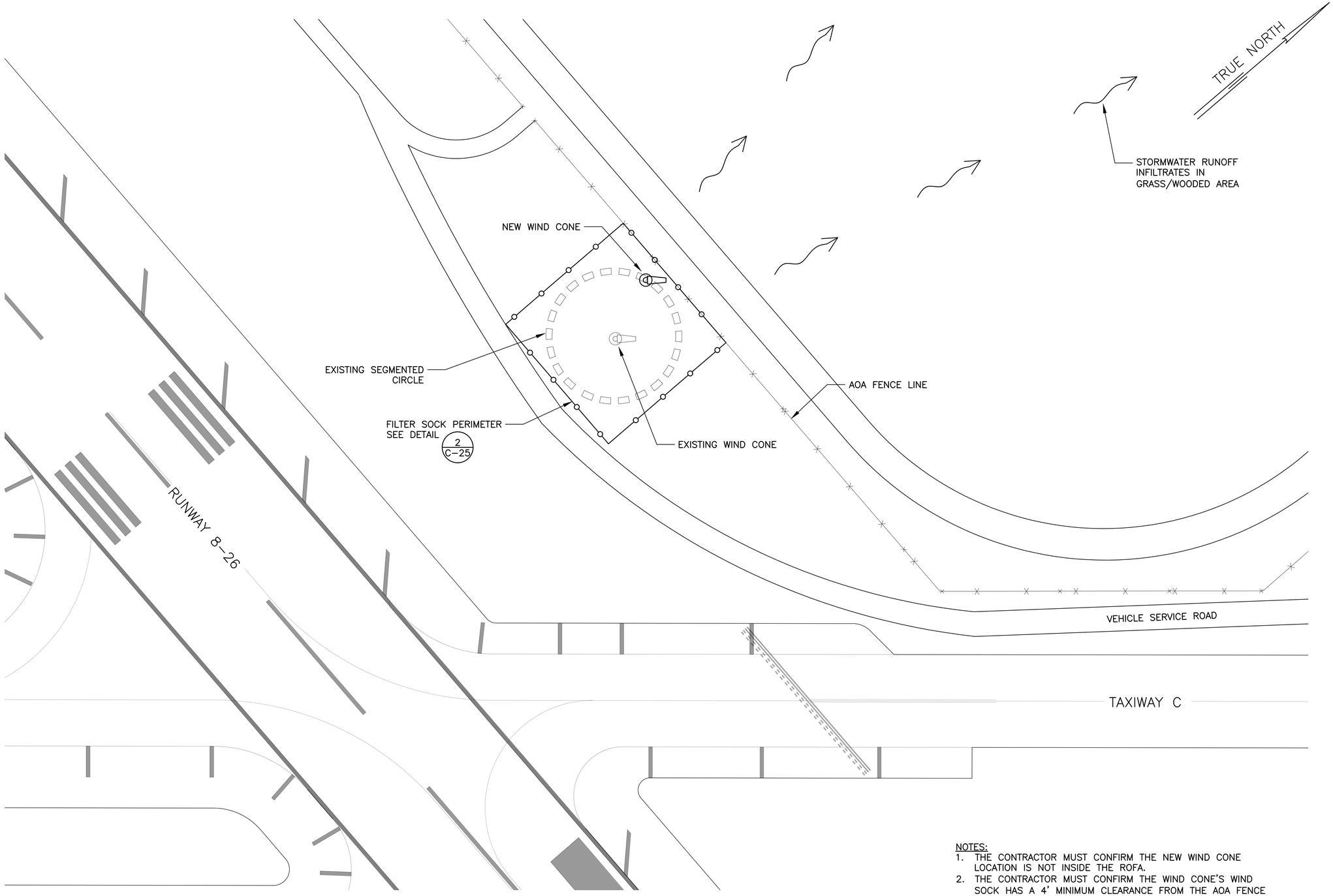
SHEET TITLE:

EROSION CONTROL PLAN 4

DATE :
OCTOBER 2022

SHEET :
16 OF 50 SHEETS

DWG. NO.
C-5



LEGEND:

FLOW PATTERN:

EROSION CONTROL – RUNWAY 8 END WIND CONE
SCALE: 1"=40'

NOTES:
1. THE CONTRACTOR MUST CONFIRM THE NEW WIND CONE LOCATION IS NOT INSIDE THE ROFA.
2. THE CONTRACTOR MUST CONFIRM THE WIND CONE'S WIND SOCK HAS A 4' MINIMUM CLEARANCE FROM THE AOA FENCE LINE.

40' 0 40' 80'
GRAPHIC SCALE 1"=40'

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186-C
HAWAII U.S.A.

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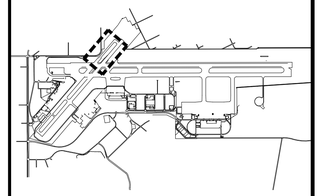
DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

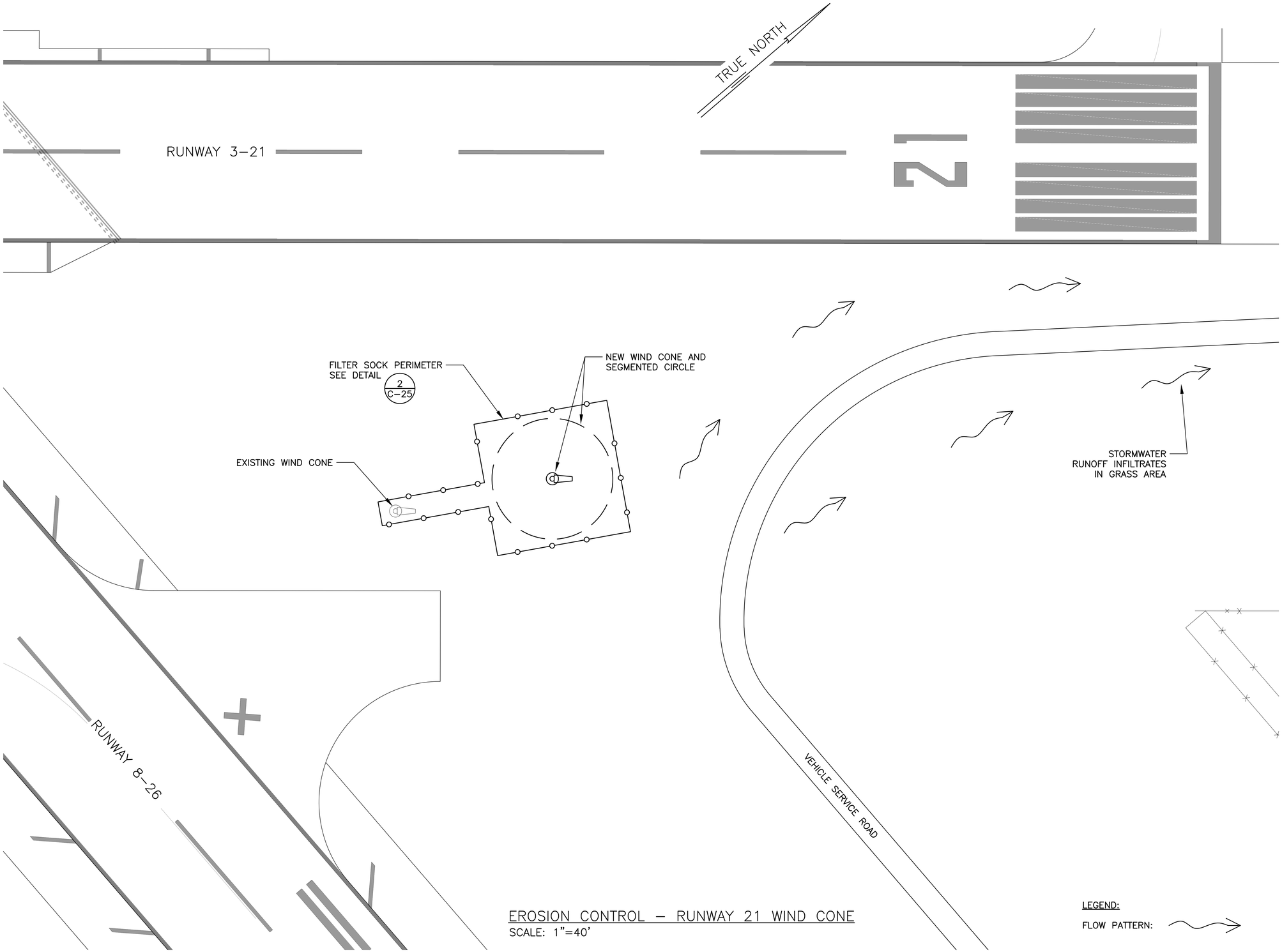
PROJECT NO.:

AH1021-20

SHEET TITLE:

EROSION CONTROL PLAN 5

DATE :	DWG. NO.
OCTOBER 2022	C-6
SHEET :	
17 OF 50 SHEETS	



EROSION CONTROL – RUNWAY 21 WIND CONE
SCALE: 1"=40'

LEGEND:

FLOW PATTERN:

40' 0 40' 80'
GRAPHIC SCALE 1"=40'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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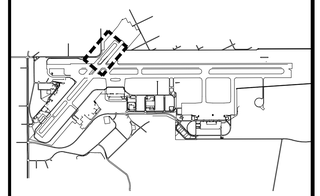
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

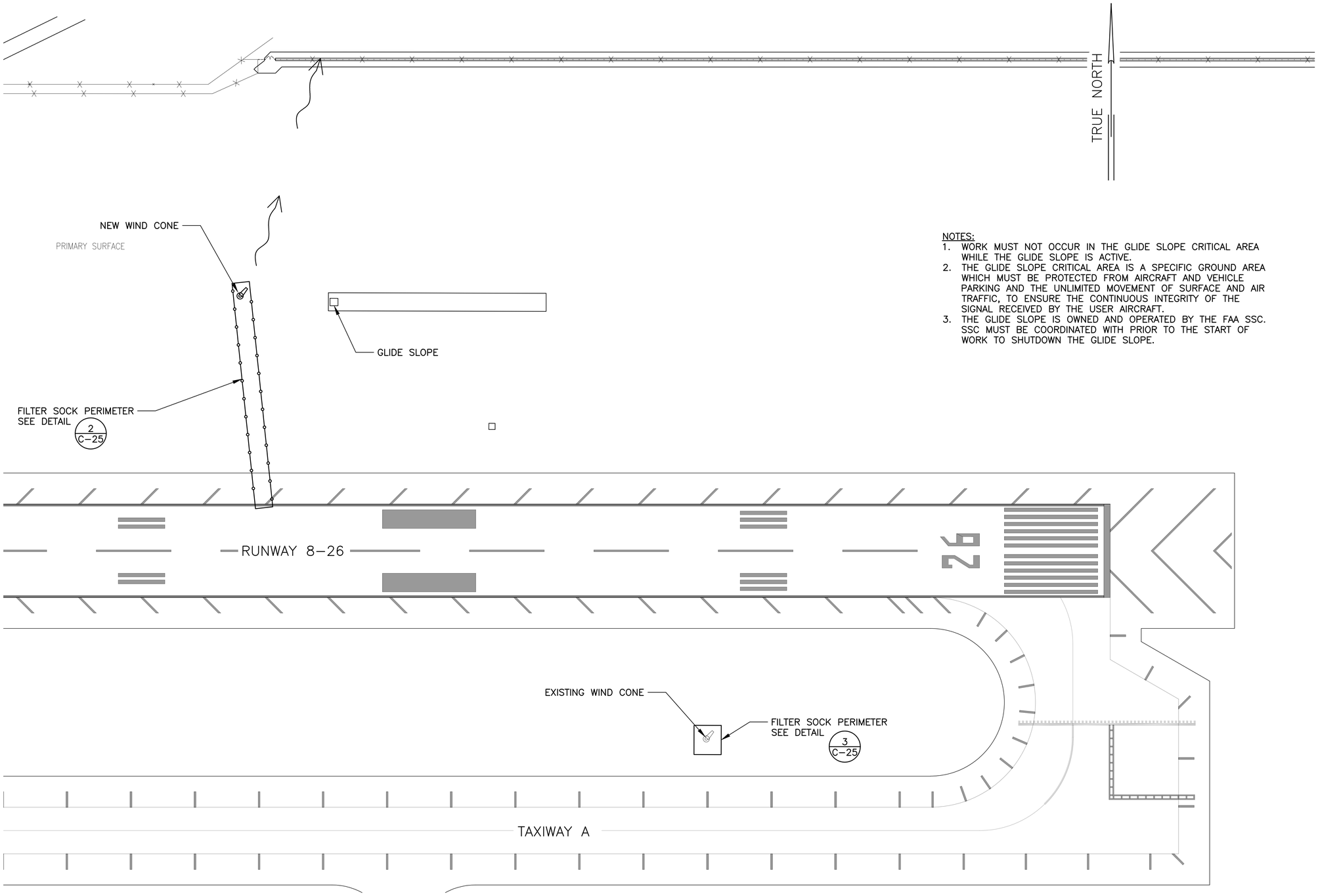
PROJECT NO.:

AH1021-20

SHEET TITLE:

EROSION CONTROL PLAN 6

DATE :	DWG. NO.
OCTOBER 2022	C-7
SHEET :	
18 OF 50 SHEETS	



NOTES:
1. WORK MUST NOT OCCUR IN THE GLIDE SLOPE CRITICAL AREA WHILE THE GLIDE SLOPE IS ACTIVE.
2. THE GLIDE SLOPE CRITICAL AREA IS A SPECIFIC GROUND AREA WHICH MUST BE PROTECTED FROM AIRCRAFT AND VEHICLE PARKING AND THE UNLIMITED MOVEMENT OF SURFACE AND AIR TRAFFIC, TO ENSURE THE CONTINUOUS INTEGRITY OF THE SIGNAL RECEIVED BY THE USER AIRCRAFT.
3. THE GLIDE SLOPE IS OWNED AND OPERATED BY THE FAA SSC. SSC MUST BE COORDINATED WITH PRIOR TO THE START OF WORK TO SHUTDOWN THE GLIDE SLOPE.

LEGEND:

FLOW PATTERN:

EROSION CONTROL – RUNWAY 26 END WIND CONE
SCALE: 1"=80'

80' 0 80' 160'
GRAPHIC SCALE 1"=80'

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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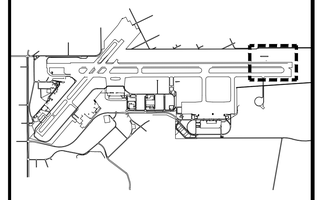
DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

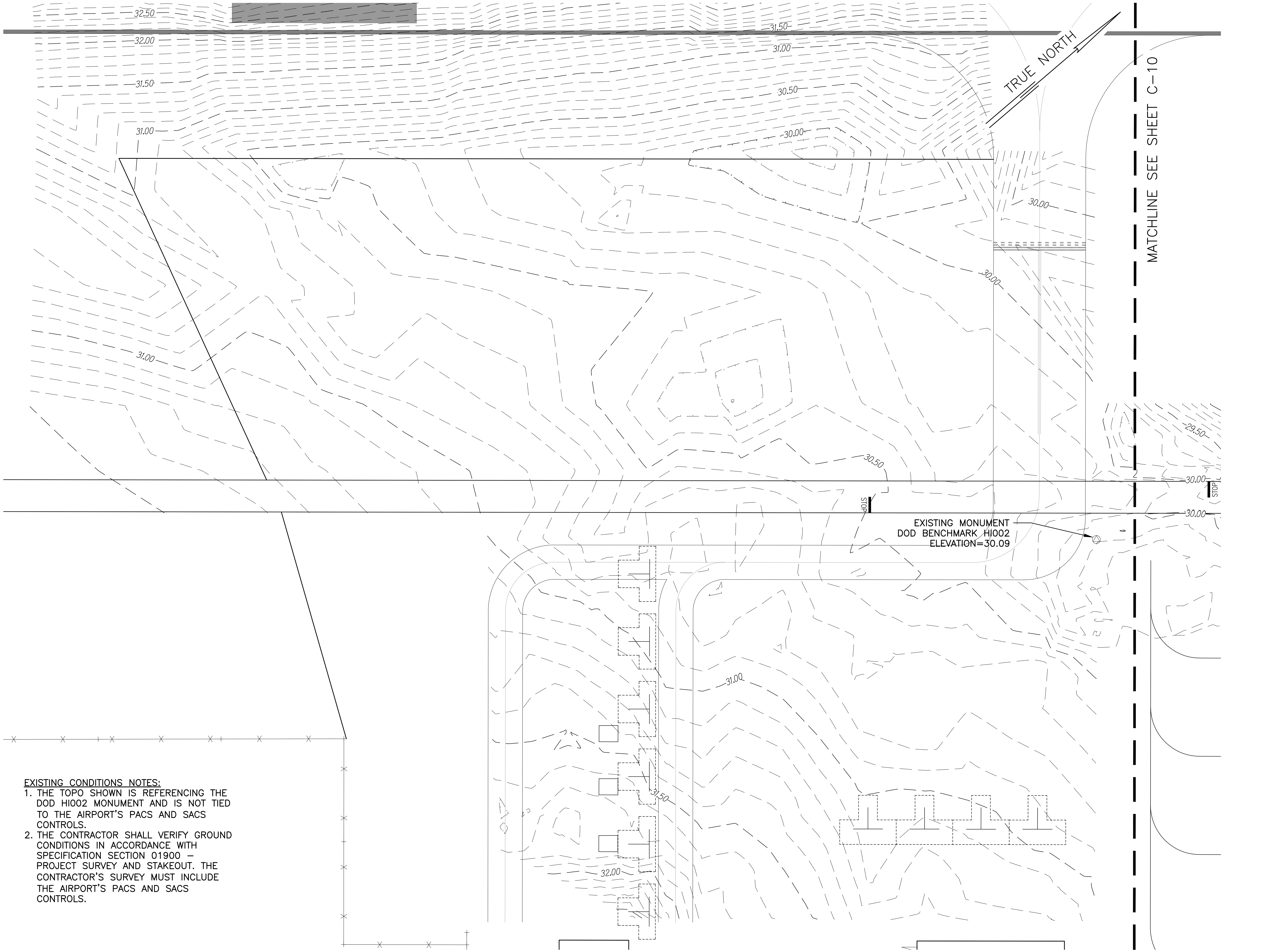
PROJECT NO.:

AH1021-20

SHEET TITLE:

EROSION CONTROL PLAN 7

DATE :	DWG. NO.
OCTOBER 2022	C-8
SHEET :	
19 OF 50 SHEETS	



EXISTING CONDITIONS NOTES:

1. THE TOPO SHOWN IS REFERENCING THE DOD HI002 MONUMENT AND IS NOT TIED TO THE AIRPORT'S PACS AND SACS CONTROLS.
2. THE CONTRACTOR SHALL VERIFY GROUND CONDITIONS IN ACCORDANCE WITH SPECIFICATION SECTION 01900 – PROJECT SURVEY AND STAKEOUT. THE CONTRACTOR'S SURVEY MUST INCLUDE THE AIRPORT'S PACS AND SACS CONTROLS.

EXISTING CONDITIONS PLAN

SCALE: 1"=40'

Airports Division

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
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HAWAII U.S.A.

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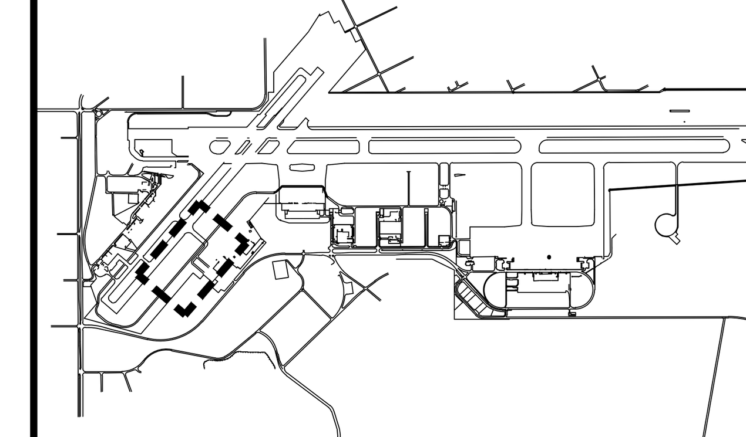
DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

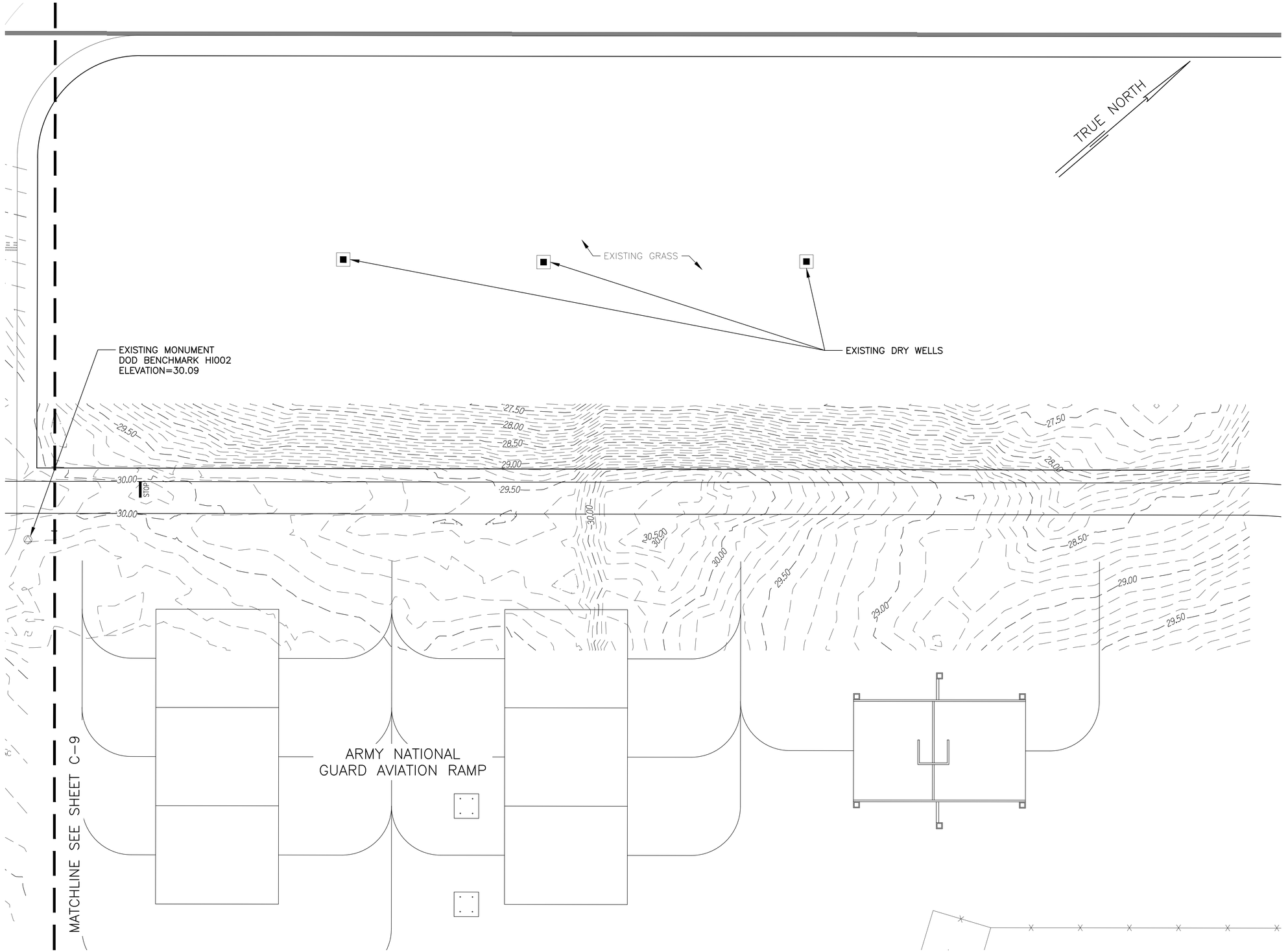
AH1021-20

SHEET TITLE:

EXISTING CONDITIONS PLAN 1

DATE :
OCTOBER 2022
SHEET :
20 OF 50 SHEETS

DWG. NO.
C-9



EXISTING CONDITIONS PLAN
SCALE: 1"=40'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
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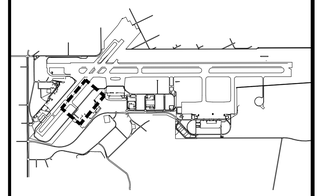
KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

SHEET TITLE:

EXISTING CONDITIONS PLAN 2

DATE :	DWG. NO.
OCTOBER 2022	C-10
SHEET :	
21 OF 50 SHEETS	

EXISTING CONDITIONS PLAN
SCALE: 1"=20'

20' 0 20' 40'
GRAPHIC SCALE 1"=20'

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
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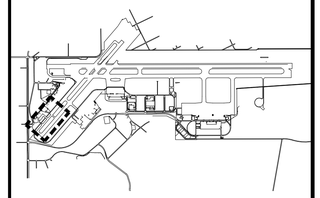
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

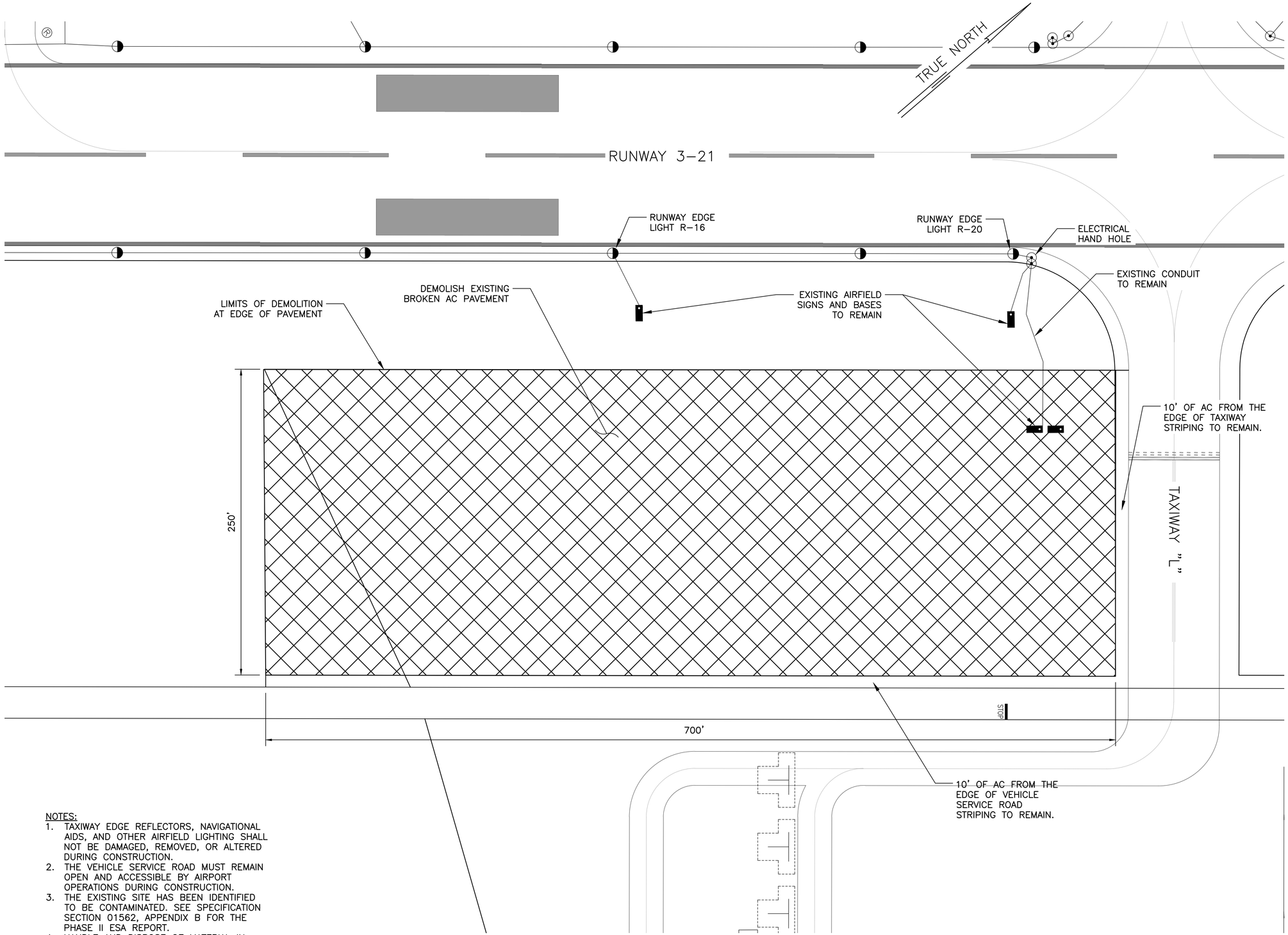
PROJECT NO.:

AH1021-20

SHEET TITLE:

EXISTING CONDITIONS PLAN 3

DATE :	DWG. NO.
OCTOBER 2022	C-11
SHEET :	
22 OF 50 SHEETS	



NOTES:
1. TAXIWAY EDGE REFLECTORS, NAVIGATIONAL AIDS, AND OTHER AIRFIELD LIGHTING SHALL NOT BE DAMAGED, REMOVED, OR ALTERED DURING CONSTRUCTION.
2. THE VEHICLE SERVICE ROAD MUST REMAIN OPEN AND ACCESSIBLE BY AIRPORT OPERATIONS DURING CONSTRUCTION.
3. THE EXISTING SITE HAS BEEN IDENTIFIED TO BE CONTAMINATED. SEE SPECIFICATION SECTION 01562, APPENDIX B FOR THE PHASE II ESA REPORT.
4. HANDLE AND DISPOSE OF MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTIONS 01562.

DEMOLITION PLAN
SCALE: 1"=40'

40' 0 40' 80'
GRAPHIC SCALE 1"=40'

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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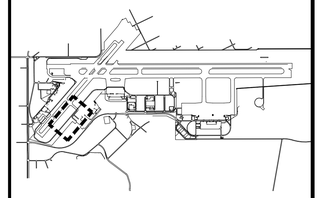
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

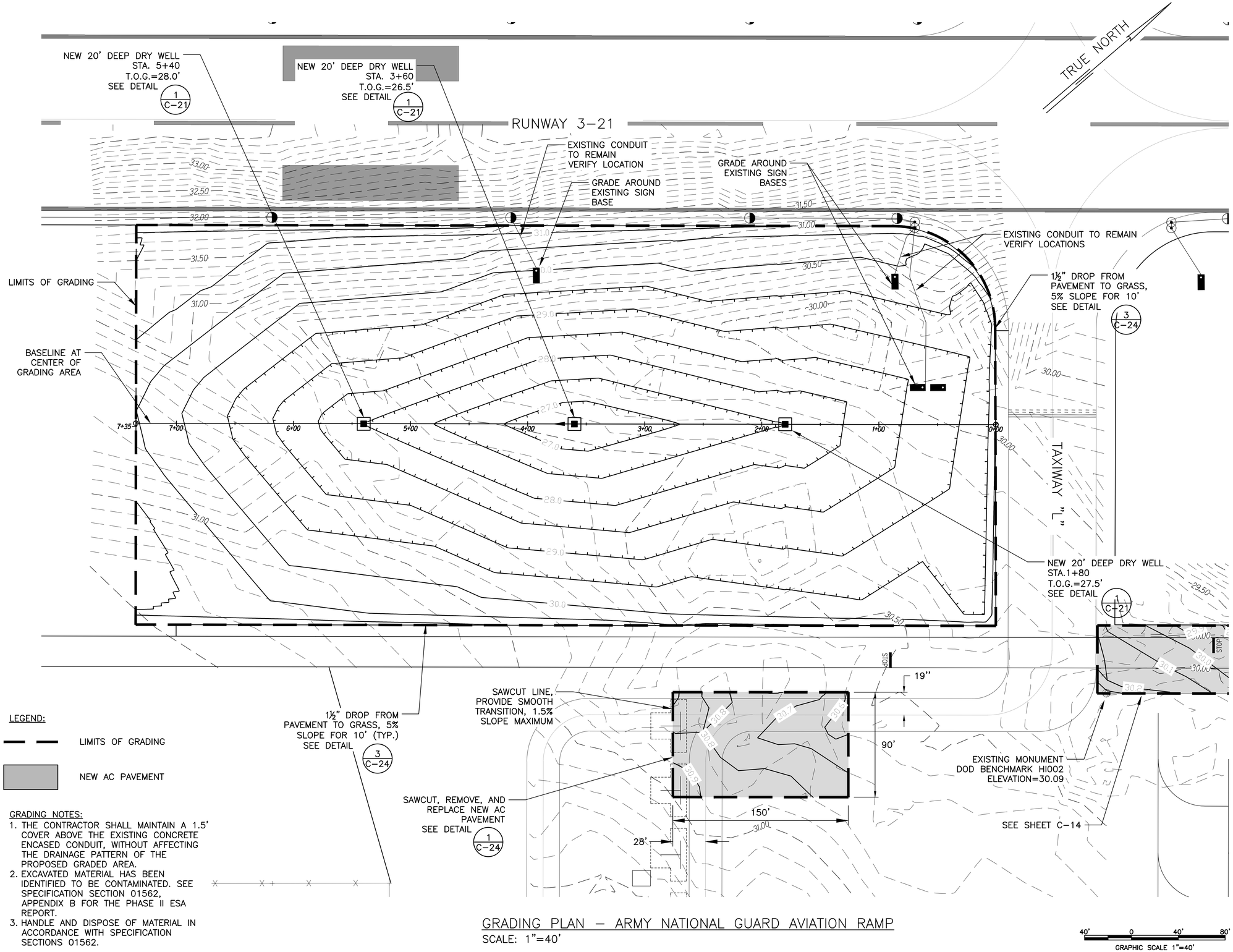
PROJECT NO.:

AH1021-20

SHEET TITLE:

DEMOLITION PLAN

DATE :	DWG. NO.
OCTOBER 2022	C-12
SHEET :	
23 OF 50 SHEETS	



GRADING PLAN – ARMY NATIONAL GUARD AVIATION RAMP
SCALE: 1"=40'

STATE OF HAWAII 1959

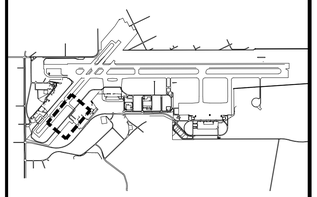
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186-C
HAWAII U.S.A.

This work was prepared by me or under my supervision.
Exp. 04-30-24
Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

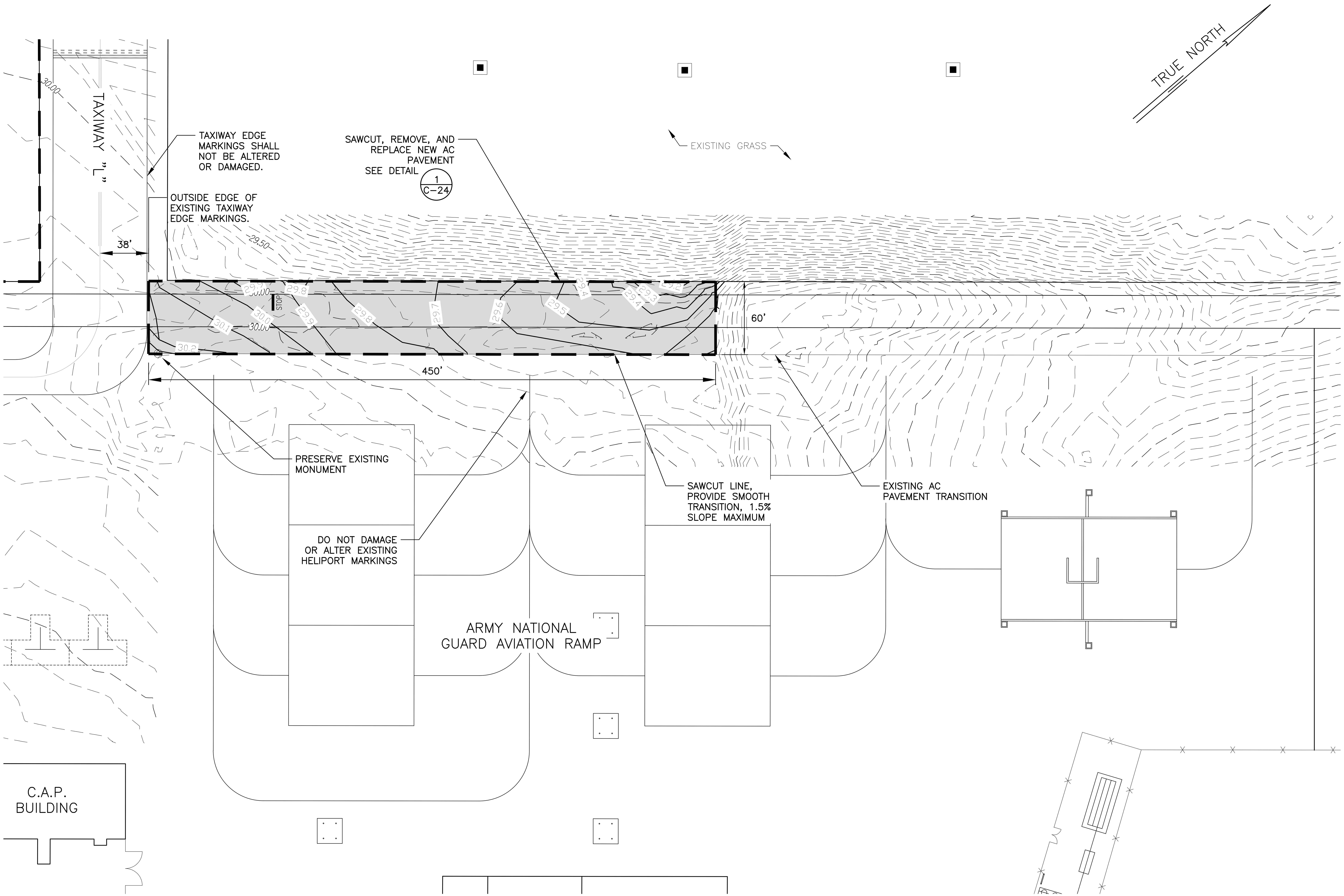
PROJECT NO.:

AH1021-20

SHEET TITLE:

GRADING PLAN 1

DATE :	DWG. NO.
OCTOBER 2022	C-13
SHEET :	
24 OF 50 SHEETS	



DRAINAGE IMPROVEMENTS PLAN
SCALE: 1"=40'

LEGEND:

LIMITS OF GRADING

NEW AC PAVEMENT

40' 0 40' 80'
GRAPHIC SCALE 1"=40'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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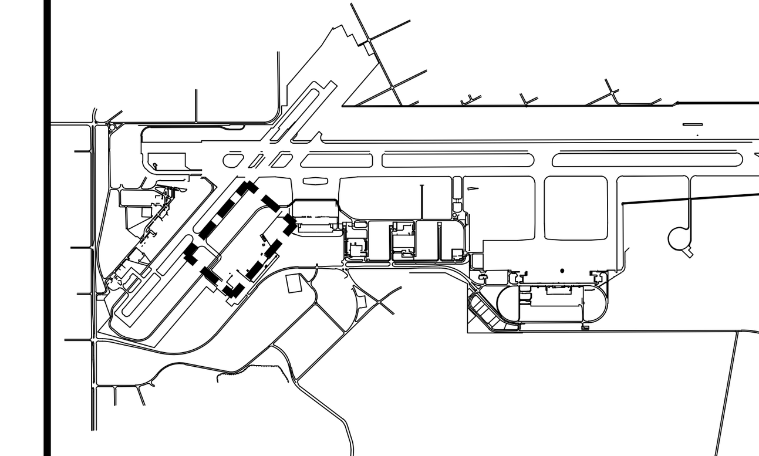


NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

**AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII**

PROJECT NO.:

AH1021-20

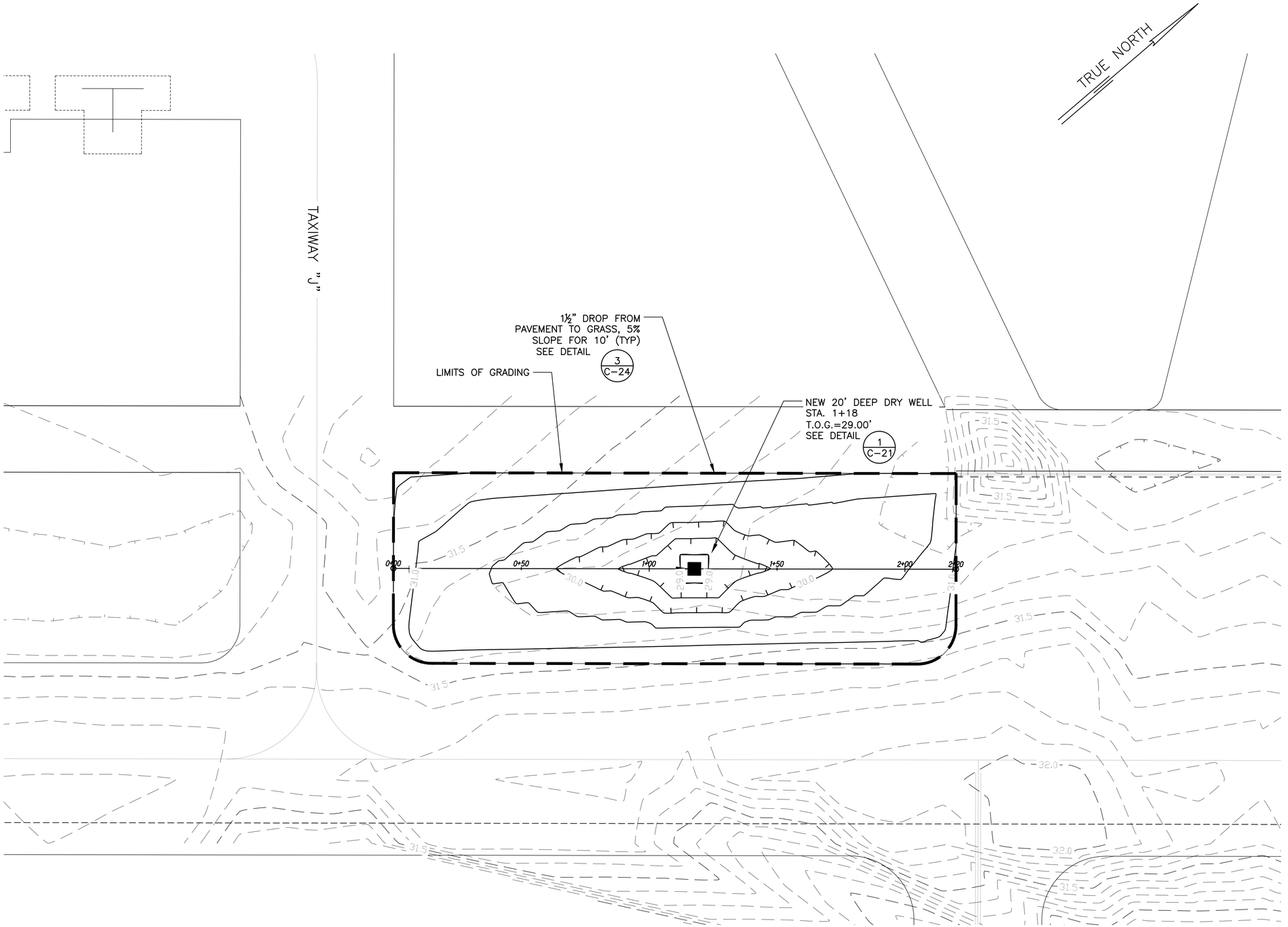
SHEET TITLE:

GRADING PLAN 2

DATE :
OCTOBER 2022
SHEET :
25 OF 50 SHEETS

DWG. NO.
C-14

H:\CADD\PROJECT DRAWINGS\1711 DOTA CIP AIRFIELD OPEN END\HILO\PONDING IMPROVEMENTS\DESIGN\TO - PONDING IMPROVEMENTS DESIGN.DWG



GRADING PLAN – TAXIWAY "I" & TAXIWAY "C"
SCALE: 1"=20'

20' 0 20' 40'
GRAPHIC SCALE 1"=20'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186-C
HAWAII USA

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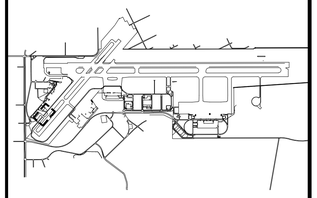
RF	RF	CD	NF

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

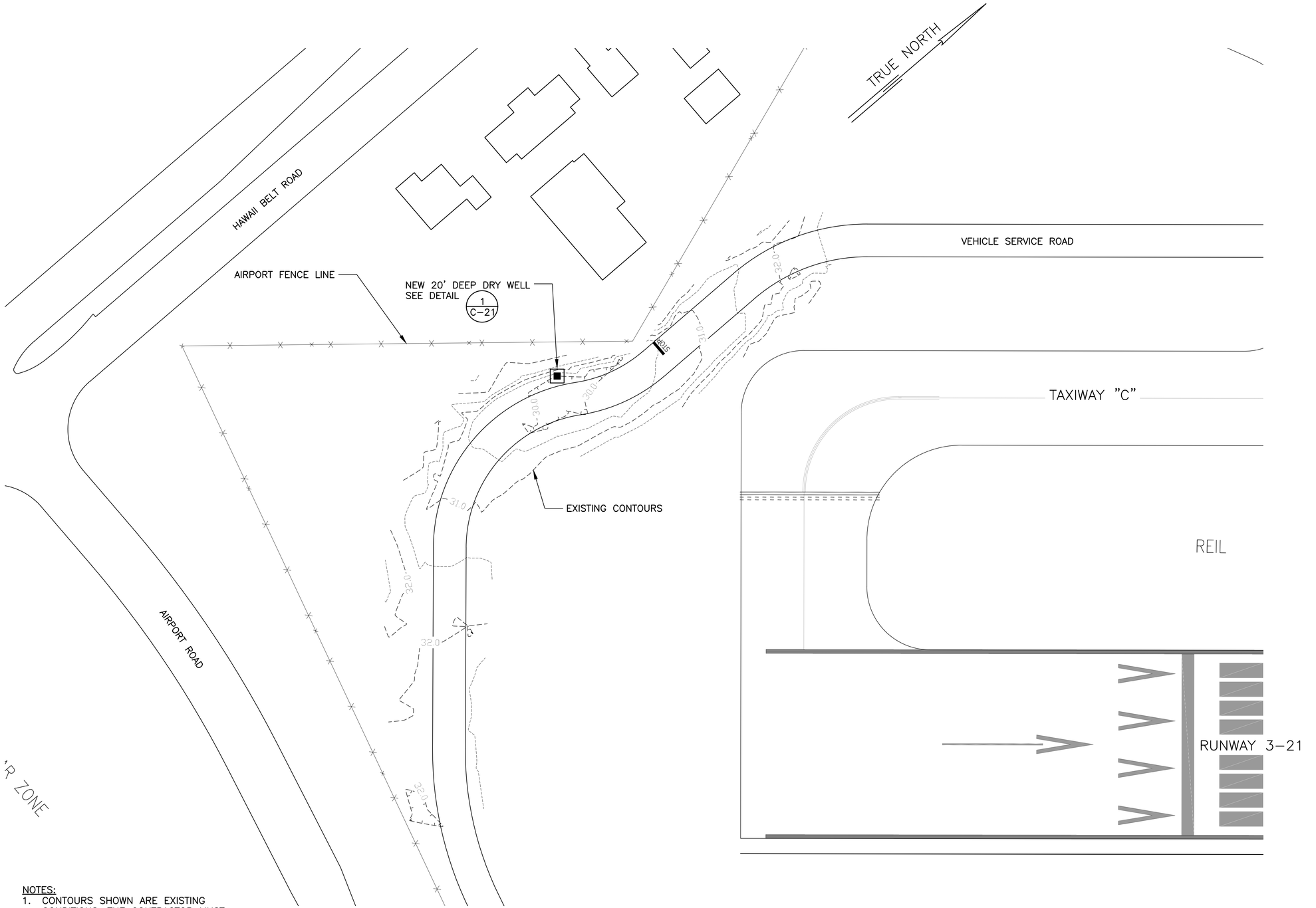
PROJECT NO.:

AH1021-20

SHEET TITLE:

GRADING PLAN 3

DATE :	DWG. NO.
OCTOBER 2022	C-15
SHEET :	
26 OF 50 SHEETS	



NOTES:
1. CONTOURS SHOWN ARE EXISTING CONDITIONS. THE CONTRACTOR MUST VERIFY THE DRAINAGE LOW POINT PRIOR TO THE INSTALLATION OF THE DRY WELL.
2. THE CONTRACTOR SHALL INSTALL THE DRY WELL WITHOUT DISTURBING THE EXISTING VEHICLE SERVICE ROAD.
3. THE CONTRACTOR SHALL CREATE A LOW POINT AT THE LOCATION OF THE INSTALLED DRY WELL TO CREATE A DRAINAGE PATTERN LEADING TO THE DRY WELL.

VEHICLE SERVICE ROAD DRAINAGE PLAN
SCALE: 1"=40'

40' 0 40' 80'
GRAPHIC SCALE 1"=40'

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
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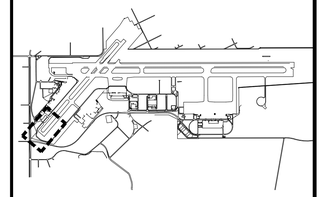


NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

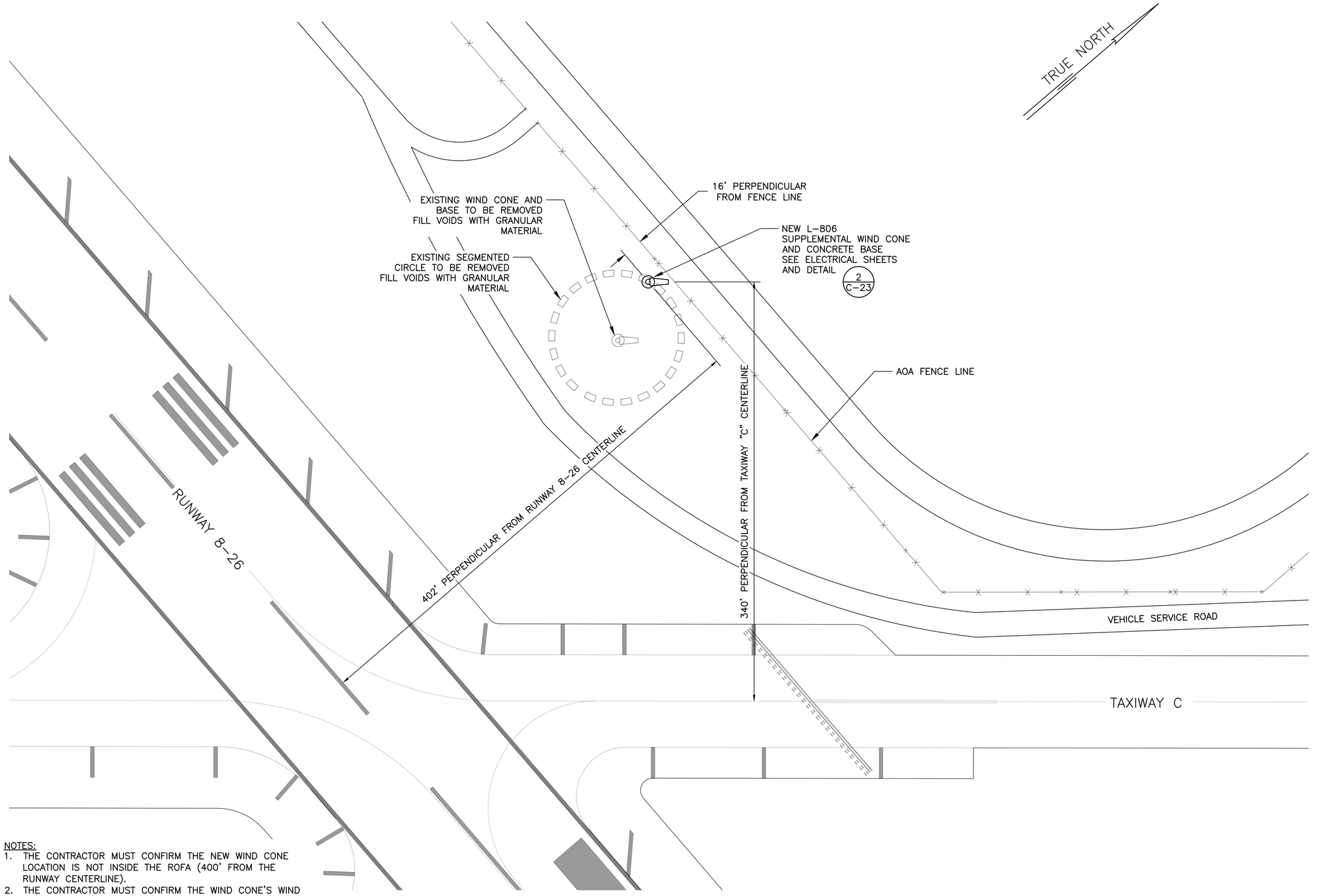
PROJECT NO.:

AH1021-20

SHEET TITLE:

DRAINAGE IMPROVEMENTS PLAN

DATE :	DWG. NO.
OCTOBER 2022	C-16
SHEET :	
27 OF 50 SHEETS	



NOTES:
1. THE CONTRACTOR MUST CONFIRM THE NEW WIND CONE LOCATION IS NOT INSIDE THE ROFA (400' FROM THE RUNWAY CENTERLINE).
2. THE CONTRACTOR MUST CONFIRM THE WIND CONE'S WIND SOCK HAS A 4' MINIMUM CLEARANCE FROM THE AOA FENCE LINE.
3. THE CONTRACTOR MUST VERIFY THAT THE RUNWAY 8 WIND CONE IS CONNECTED TO THE RUNWAY 8-26 EDGE LIGHT SYSTEM. OUTAGES OF THE RUNWAY 8-26 EDGE LIGHTS MUST BE COORDINATED WITH ITO.

RUNWAY 8 END WIND CONE REPLACEMENT PLAN
SCALE: 1"=40'

40' 0 40' 80'
GRAPHIC SCALE 1"=40'

STATE OF HAWAII 1959

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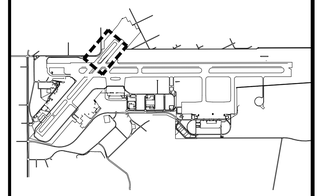


NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

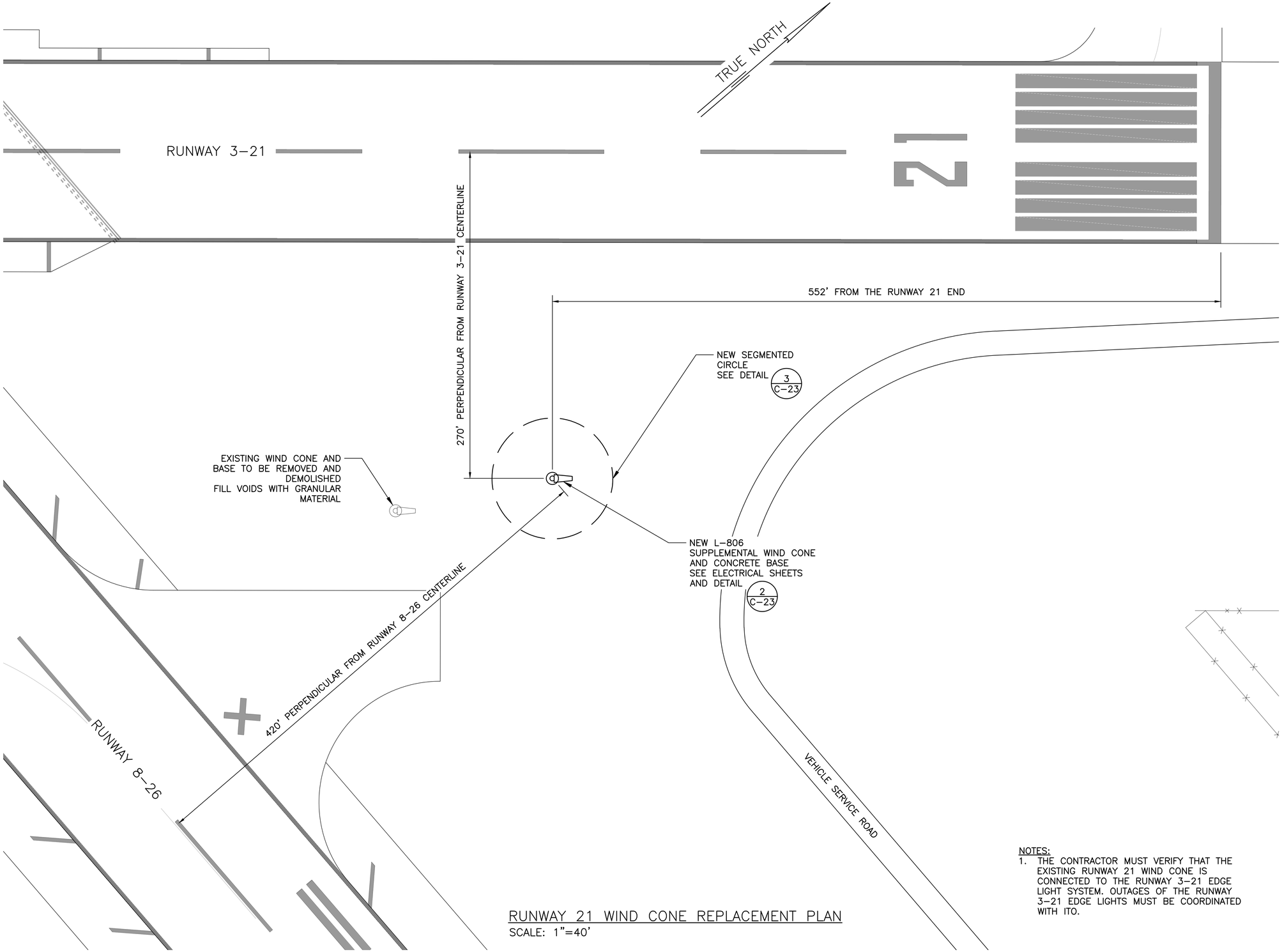
PROJECT NO.:

AH1021-20

SHEET TITLE:

WIND CONE REPLACEMENT PLAN 1

DATE :	DWG. NO.
OCTOBER 2022	C-17
SHEET :	
28 OF 50 SHEETS	



RUNWAY 21 WIND CONE REPLACEMENT PLAN
SCALE: 1"=40'

NOTES:
1. THE CONTRACTOR MUST VERIFY THAT THE EXISTING RUNWAY 21 WIND CONE IS CONNECTED TO THE RUNWAY 3–21 EDGE LIGHT SYSTEM. OUTAGES OF THE RUNWAY 3–21 EDGE LIGHTS MUST BE COORDINATED WITH ITO.

40' 0 40' 80'
GRAPHIC SCALE 1"=40'

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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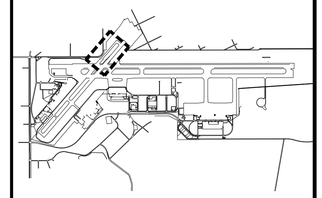
KEY PLAN / NOTES:



NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

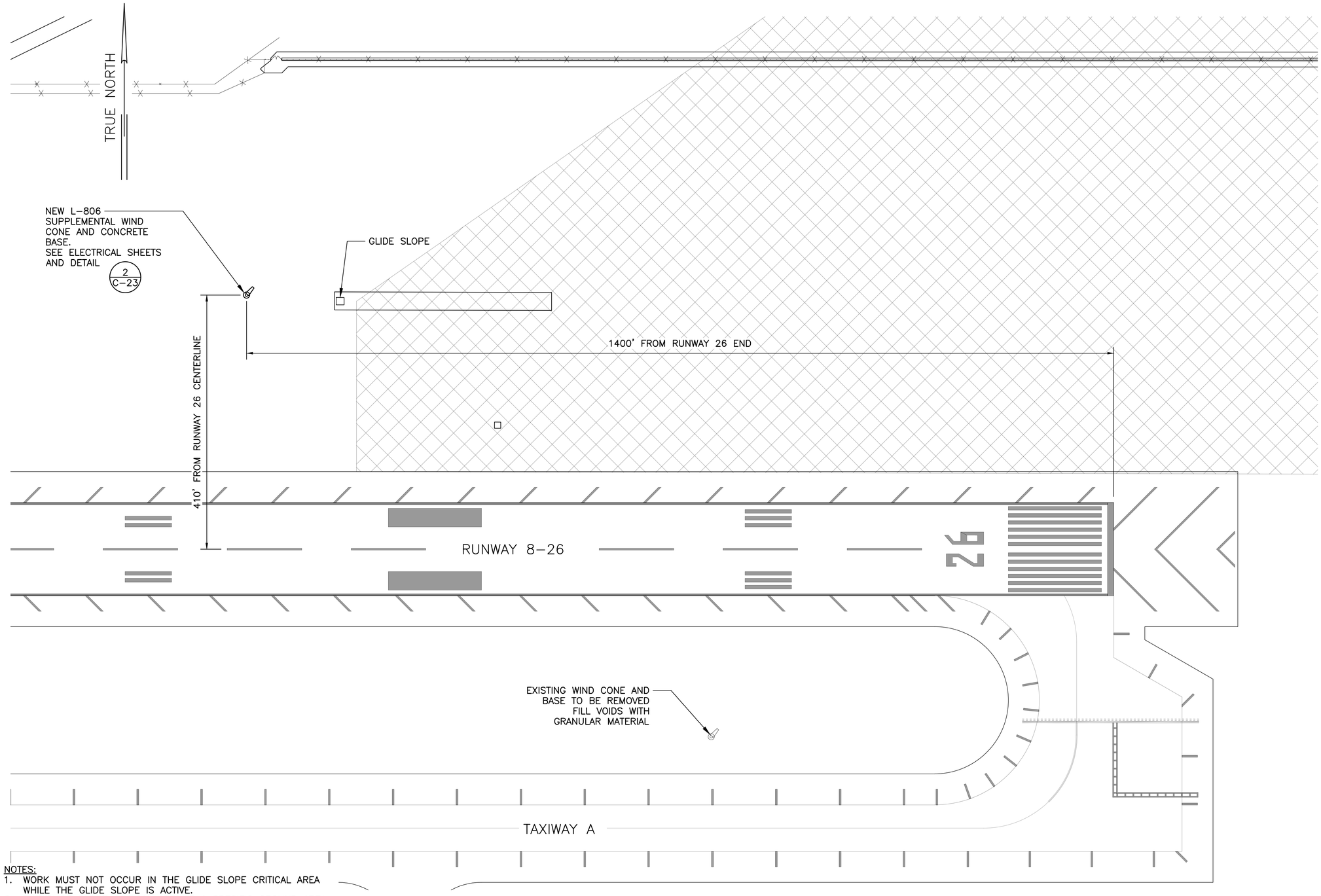
PROJECT NO.:

AH1021-20

SHEET TITLE:

WIND CONE REPLACEMENT PLAN 2

DATE :	DWG. NO.
OCTOBER 2022	C-18
SHEET :	
29 OF 50 SHEETS	



NOTES:
1. WORK MUST NOT OCCUR IN THE GLIDE SLOPE CRITICAL AREA WHILE THE GLIDE SLOPE IS ACTIVE.
2. THE GLIDE SLOPE CRITICAL AREA IS A SPECIFIC GROUND AREA WHICH MUST BE PROTECTED FROM AIRCRAFT AND VEHICLE PARKING AND THE UNLIMITED MOVEMENT OF SURFACE AND AIR TRAFFIC, TO ENSURE THE CONTINUOUS INTEGRITY OF THE SIGNAL RECEIVED BY THE USER AIRCRAFT.
3. THE GLIDE SLOPE IS OWNED AND OPERATED BY THE FAA SSC. SSC MUST BE COORDINATED WITH PRIOR TO THE START OF WORK TO SHUTDOWN THE GLIDE SLOPE.

RUNWAY 26 END WIND CONE REPLACEMENT PLAN
SCALE: 1"=80'

LEGEND:
GLIDE SLOPE CRITICAL AREA:

80' 0 80' 160'
GRAPHIC SCALE 1"=80'

STATE OF HAWAII 1959

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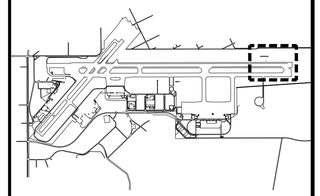


NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

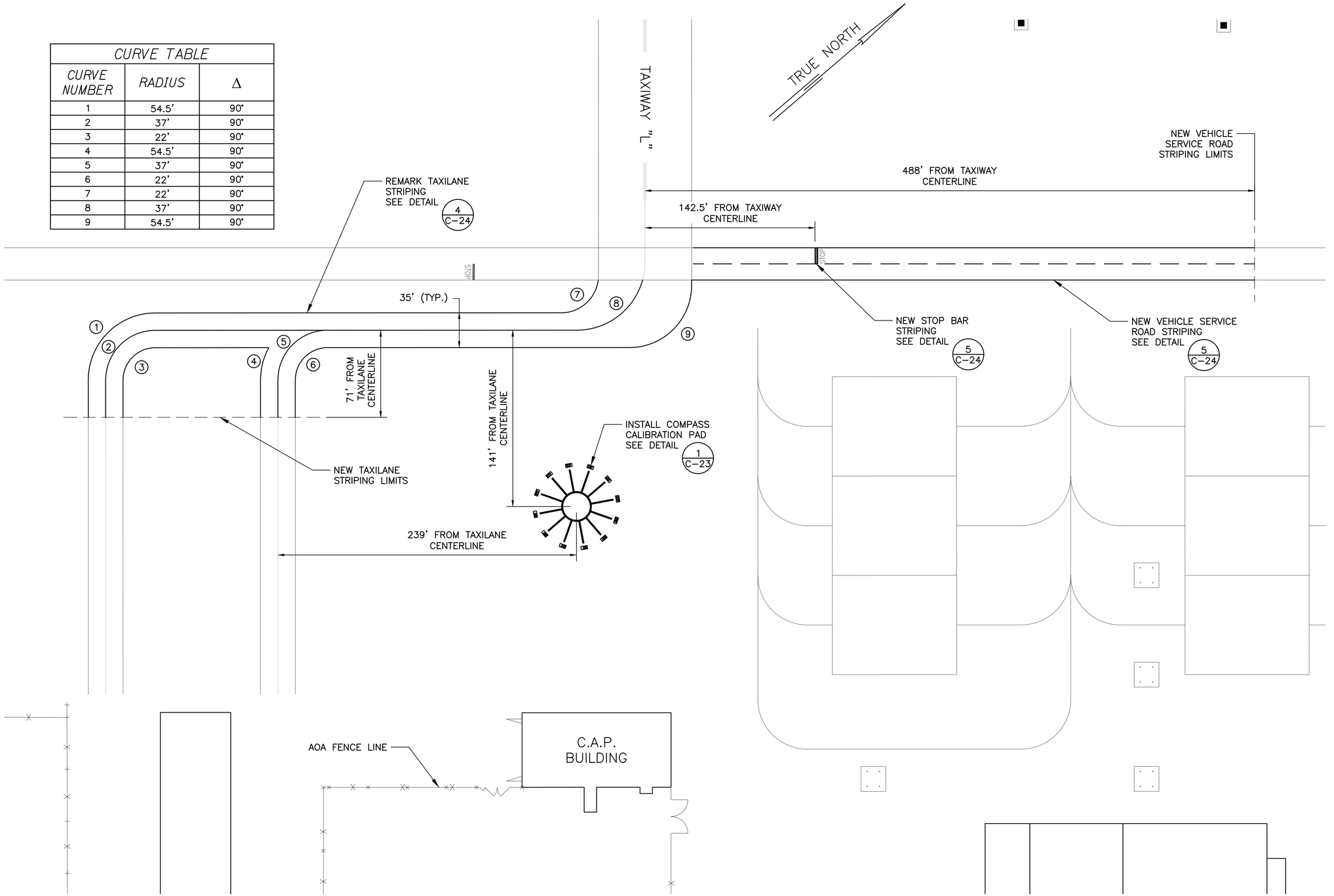
AH1021-20

SHEET TITLE:

WIND CONE REPLACEMENT PLAN 3

DATE :	DWG. NO.
OCTOBER 2022	C-19
SHEET :	
30 OF 50 SHEETS	

CURVE TABLE		
CURVE NUMBER	RADIUS	Δ
1	54.5'	90°
2	37'	90°
3	22'	90°
4	54.5'	90°
5	37'	90°
6	22'	90°
7	22'	90°
8	37'	90°
9	54.5'	90°



STRIPING NOTES:
1. REMARKING OF THE TAXILANE AND VEHICLE SERVICE ROAD STRIPING SHALL OCCUR AFTER NEW AC PAVEMENT IS PLACED PER SHEET C-13 AND C-14

STRIPING PLAN
SCALE: 1"=40'

50' 0 25' 50'
GRAPHIC SCALE 1"=50'

Airports Division
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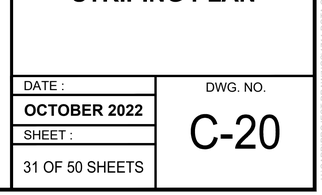


NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

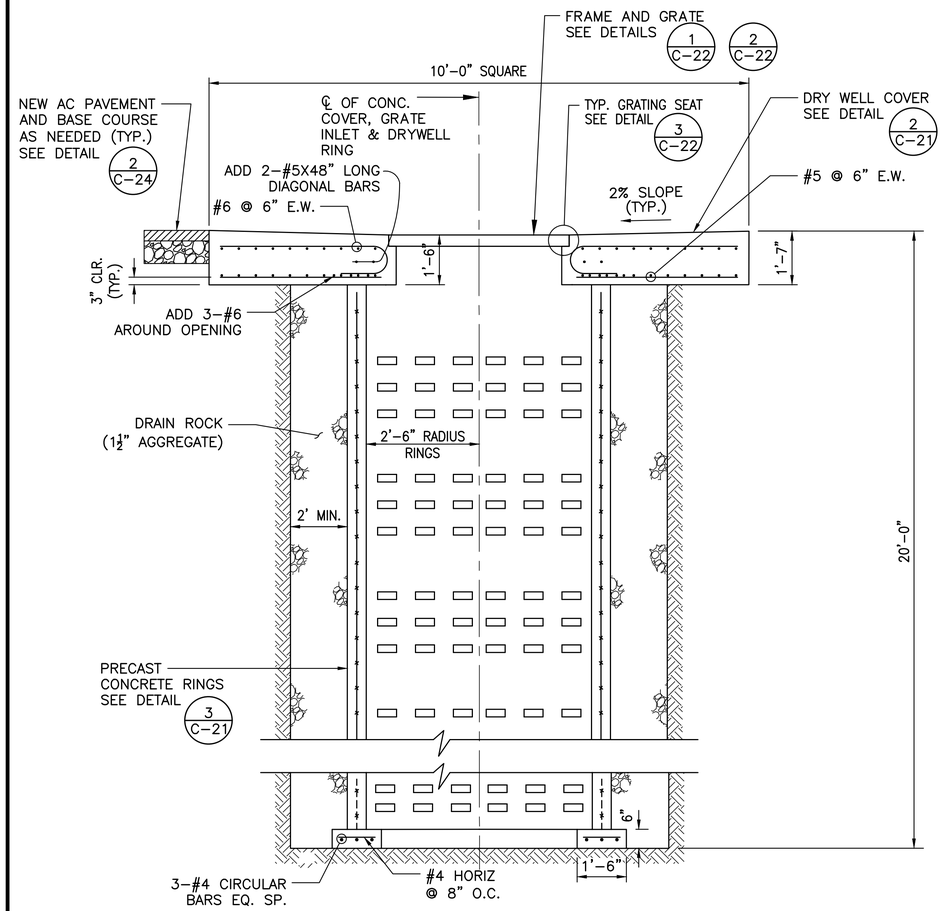
AH1021-20

SHEET TITLE:

STRIPING PLAN

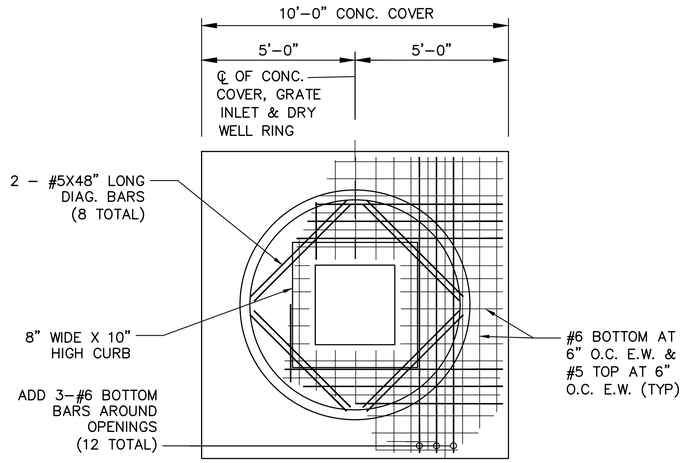
DATE :
OCTOBER 2022
SHEET :
31 OF 50 SHEETS

DWG. NO.
C-20

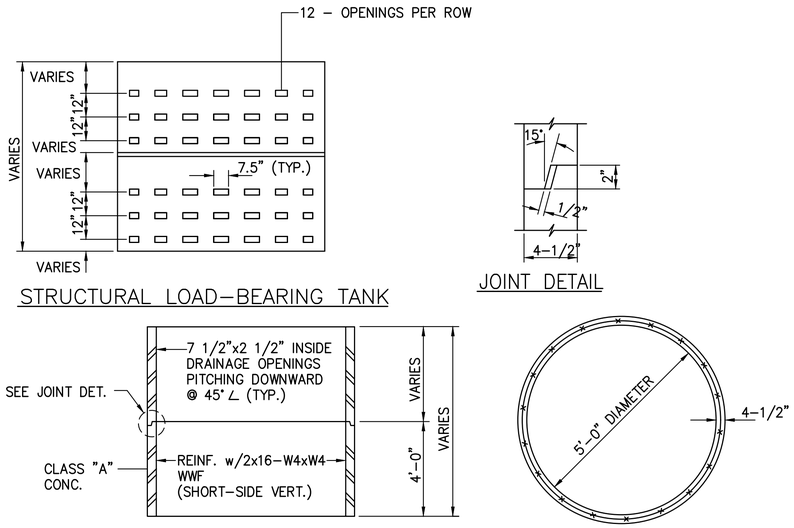


1 C-21 20' DEEP DRY WELL SECTION
SCALE: NOT TO SCALE

NOTES:
1. BACKFILL WITH #4 CRUSHED ROCK (1 1/2").
2. CONCRETE FOR COVER SHALL BE 4000 PSI, 28 DAY COMPRESSIVE STRENGTH.
3. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615, GRADE 60. BENDS & HOOKS SHALL BE TO FAR FACE OF INTERSECTING WALL OR SLAB.
4. CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOW, UNLESS NOTED OTHERWISE:
   a) CONCRETE CAST AGAINST EARTH 3"
   b) CONCRETE EXPOSED TO EARTH 2"
   c) CONCRETE EXPOSED TO WEATHER 2"
5. CERTAIN DRY WELLS SHALL BE TESTED AS DESCRIBED IN THE UNDERGROUND INJECTION CONTROL (UIC) PERMIT APPLICATION. A GEOLOGIST, HIRED BY THE CONTRACTOR, SHALL WITNESS THE TESTING, PREPARE AND SUBMIT A REPORT TO THE DEPARTMENT OF HEALTH AS NECESSARY TO OBTAIN A PERMIT TO OPERATE THE DRY WELLS.
6. ONLY WATER SOLUBLE DRILLING LUBRICANTS ARE ALLOWED. NO CLAY OR OTHER DRILLING LUBRICANTS, WHICH HAVE THE POTENTIAL TO REDUCE PERMEABILITY, IS PERMITTED.
7. DEPENDING ON THE SOIL PROPERTIES, THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER TO DETERMINE IF DRAIN RINGS SHALL BE INSTALLED.



2 C-21 TYPICAL DRY WELL COVER DETAIL
SCALE: NOT TO SCALE



3 C-21 TYPICAL PRECAST REIN. CONC. RING DETAILS
SCALE: NOT TO SCALE

Airports Division
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AT
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SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

SHEET TITLE:

DRY WELL DETAILS 1

DATE :
OCTOBER 2022
SHEET :
32 OF 50 SHEETS

DWG. NO.
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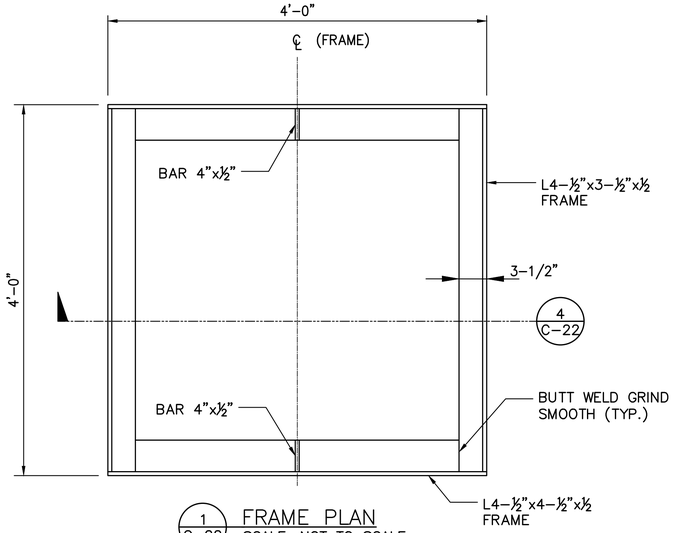
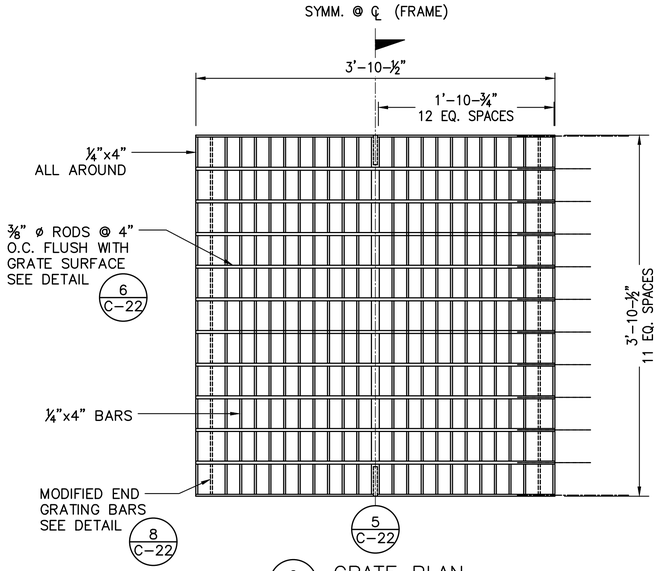
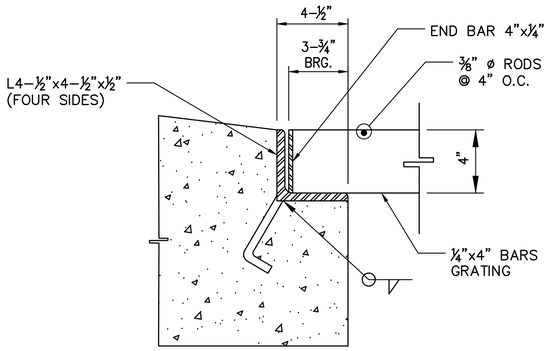


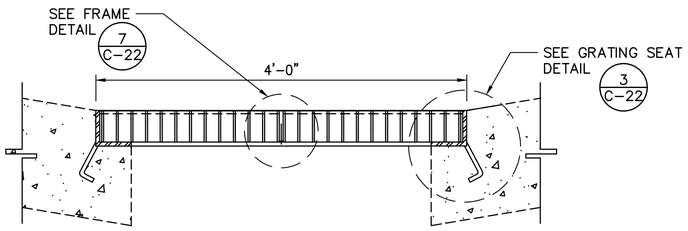
1 C-22 FRAME PLAN
SCALE: NOT TO SCALE



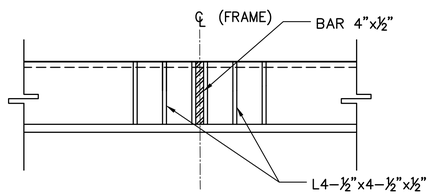
2 C-22 GRATE PLAN
SCALE: NOT TO SCALE



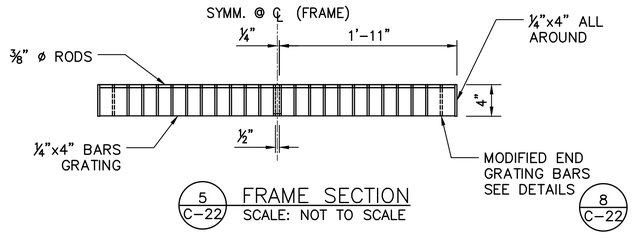
3 C-22 GRATE SEAT DETAIL
SCALE: NOT TO SCALE



4 C-22 FRAME SECTION
SCALE: NOT TO SCALE



7 C-22 FRAME DETAIL
SCALE: NOT TO SCALE



5 C-22 FRAME SECTION
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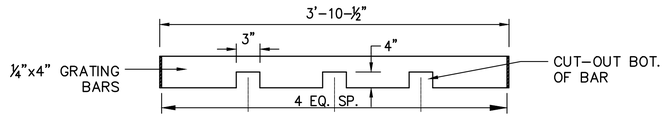
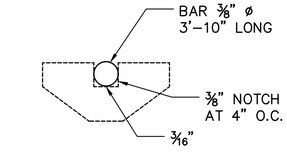


8 C-22 MODIFIED END GRATING BARS DETAIL
SCALE: NOT TO SCALE



6 C-22 NOTCH DETAIL
SCALE: NOT TO SCALE

NOTES:

1. GRATING SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.
2. ALL STEEL SHALL BE STRUCTURAL GRADE (ASTM A36 MIN.)
3. ALL WELDS 5/16" UNLESS OTHERWISE NOTED. GRIND SMOOTH ALL EXPOSED WELDS.
4. ALL WELDING SHALL BE IN ACCORDANCE WITH CURRENT EDITION OF REINF. STEEL WELDING CODE AWS D1.4.

Airports Division
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STATE OF HAWAII

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KEY PLAN / NOTES:

NO.	DATE	REVISIONS

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AT
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SOUTH HILO, HAWAII

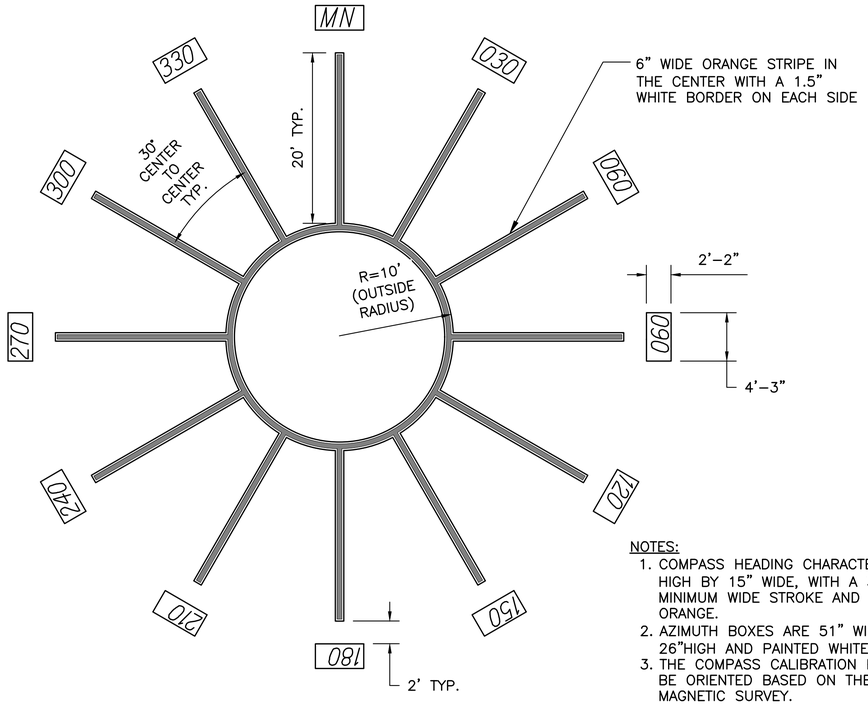
PROJECT NO.:

AH1021-20

SHEET TITLE:

DRY WELL DETAILS 2

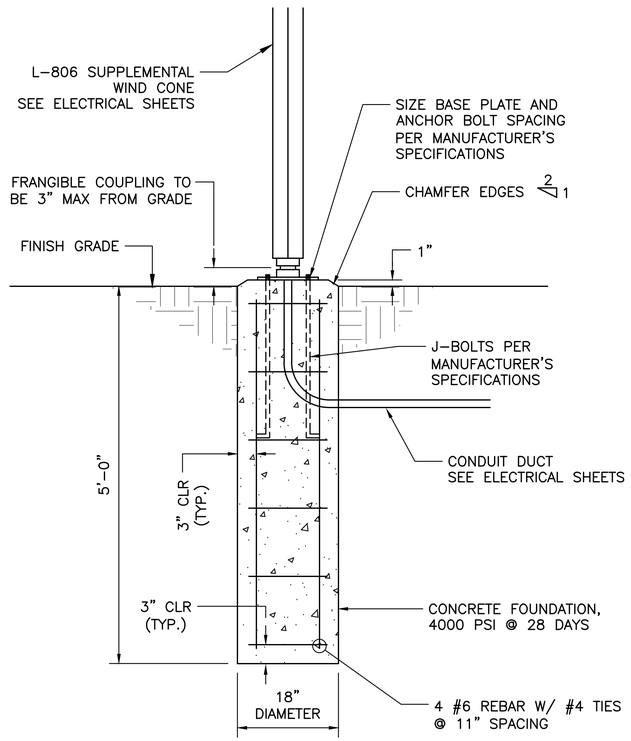
DATE :	DWG. NO.
OCTOBER 2022	C-22
SHEET :	
33 OF 50 SHEETS	



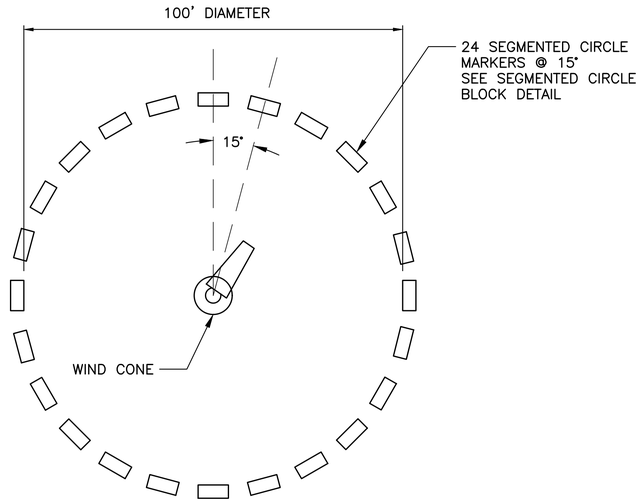
NOTES:

1. COMPASS HEADING CHARACTERS ARE 24" HIGH BY 15" WIDE, WITH A 3.5" MINIMUM WIDE STROKE AND PAINTED ORANGE.
2. AZIMUTH BOXES ARE 51" WIDE BY 26"HIGH AND PAINTED WHITE.
3. THE COMPASS CALIBRATION PAD SHALL BE ORIENTED BASED ON THE APPROVED MAGNETIC SURVEY.

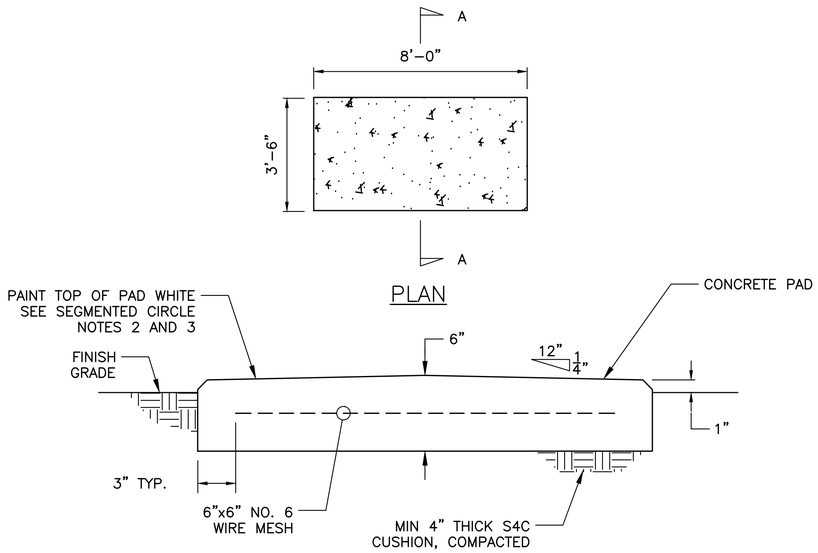
1 / C-23 COMPASS CALIBRATION PAD DETAIL
SCALE: NOT TO SCALE



2 / C-23 SUPPLEMENTAL WIND CONE FOUNDATION DETAIL
SCALE: NOT TO SCALE



3 / C-23 SEGMENTED CIRCLE DETAIL
SCALE: NOT TO SCALE



SECTION "A-A"

4 / C-23 SEGMENTED CIRCLE BLOCK DETAIL
SCALE: NOT TO SCALE

SEGMENTED CIRCLE NOTES:

1. THE LOCATION OF THE DEMOLSIHED SEGMENTED CIRCLE SHALL BE FILLED AND MADE LEVEL WITH THE EXISTING AREA.
2. TOPS OF SEGMENTED CIRCLE BLOCKS SHALL BE PAINTED WHITE WITH 1 PRIME COAT & 2 FINISH COATS.
3. PAINT SHALL BE WHITE, CONFORMING TO FEDERAL SPECIFICATION TT-P-952A (ACRYLIC EMULSION) EQUAL TO OIL PAINT, AS AMENDED. REFLECTIVE MEDIA SHALL NOT BE USED IN THE PAINT. PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE PAINT MANUFACTURER'S RECOMMENDATIONS.
4. THE AREA AROUND THE SEGMENTED CIRCLE SHALL BE CLEARED OF DEBRIS AND VEGETATION SHALL BE TRIMMED SO THE SEGMENTED CIRCLE MAY BE CLEARLY SEEN FROM THE AIR.
5. THE FURNISHING AND INSTALLATION OF THE SEGMENTED CIRCLE SHALL MEET ALL REQUIREMENTS SPECIFIED IN FAA AC 150/5340-5, SEGMENTED CIRCLE AIRPORT MARKER SYSTEM.
6. SEGMENTED CIRCLE BLOCKS SHALL CONFORM TO SPECIFICATION SECTION 03300 – CONCRETE FOR MISCELLANEOUS STRUCTURES.

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186-C
HAWAII U.S.A.

This work was prepared by me or under my supervision.
Exp. 04-30-24

Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

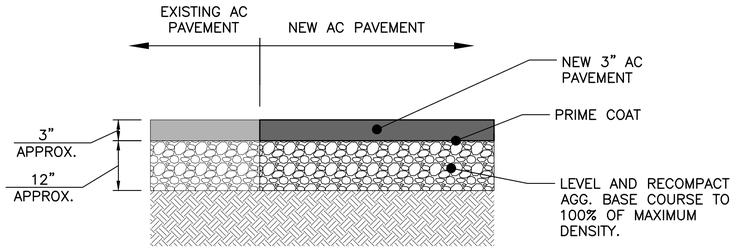
AH1021-20

SHEET TITLE:

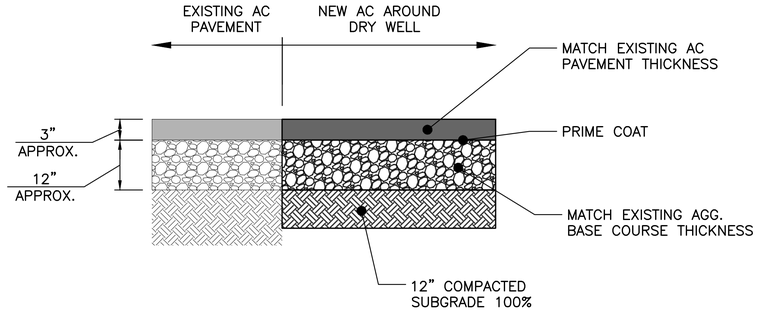
NAVAID DETAILS

DATE :
OCTOBER 2022
SHEET :
34 OF 50 SHEETS

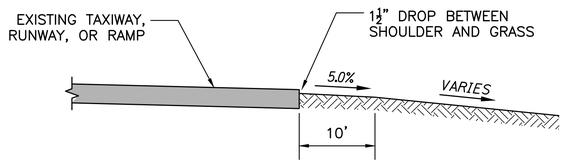
DWG. NO.
C-23



1 C-24 AC PAVEMENT
SCALE: NOT TO SCALE



2 C-24 DRY WELL AC SECTION
SCALE: NOT TO SCALE



3 C-24 PAVEMENT DROP SECTION
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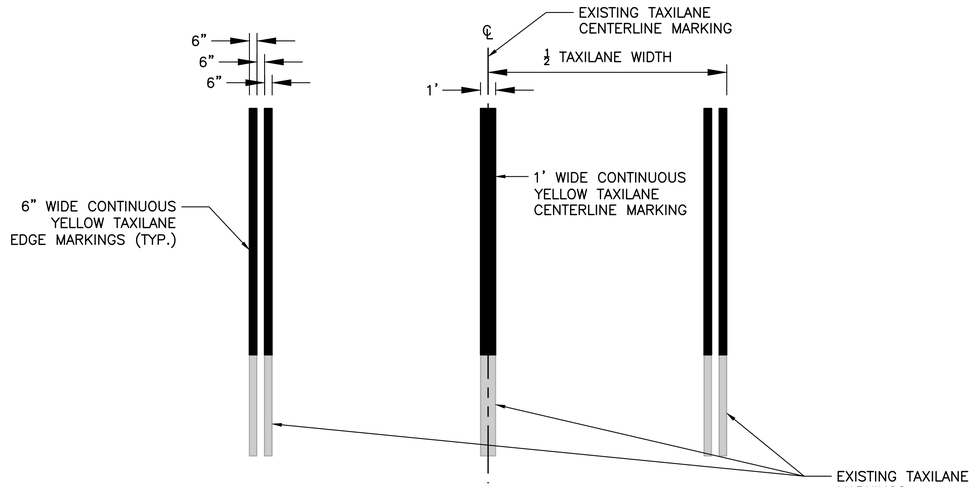
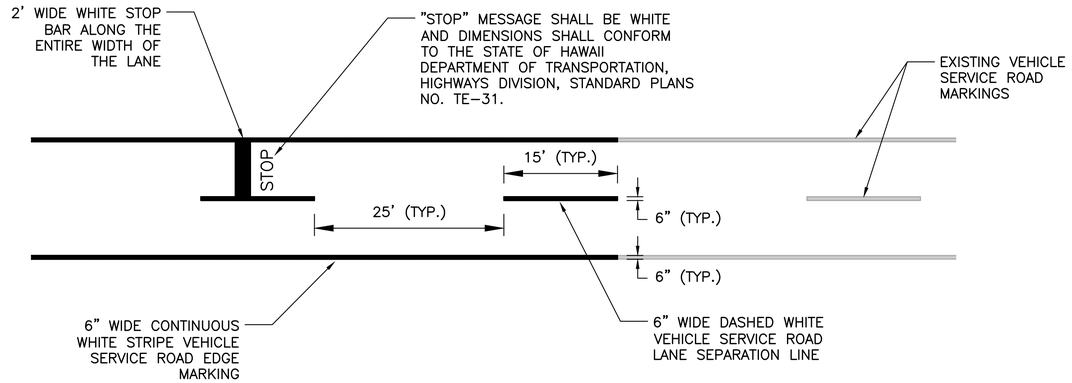


4 C-24 TAXILANE PAVEMENT MARKINGS
SCALE: NOT TO SCALE



5 C-24 VEHICLE SERVICE ROAD PAVEMENT MARKINGS
SCALE: NOT TO SCALE

PAVEMENT MARKING NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE LAID OUT BY A LICENSED SURVEYOR WITH SUFFICIENT REFERENCE POINTS. DETAILS FOR NEW PAVEMENT MARKINGS SHLL BE IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 140/5340-1M (OR CURRENT EDITION) "STANDARDS FOR AIRPORT MARKINGS".

2. THE CONTRACTOR SHALL NOT DISCARD ANY EXCESS PAINT ON EXISTING PAVEMENT MARKINGS, INCLUDING PERFORMING TEST SPRAYS ON THE EXISTING MARKINGS, SPRAYING EXISTING MARKINGS TO CLEAN PAINT GUNS, AND PAINTING ADDED MARKINGS TO AVOID REQUIRED PAINT CLEAN UP. THE CONTRACTOR SHALL POSSESS TRAPS FOR EXCESS SPRAYING AND TEST SPRAY, AND A WATERPROOF CONTAINER TO CAPTURE AND HOLD ALL PAINTING WASH WATER. ALL WASH WATER SHALL BE PROPERLY HAULED AND DISPOSED OFF AIRPORT PROPERTY DAILY.

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

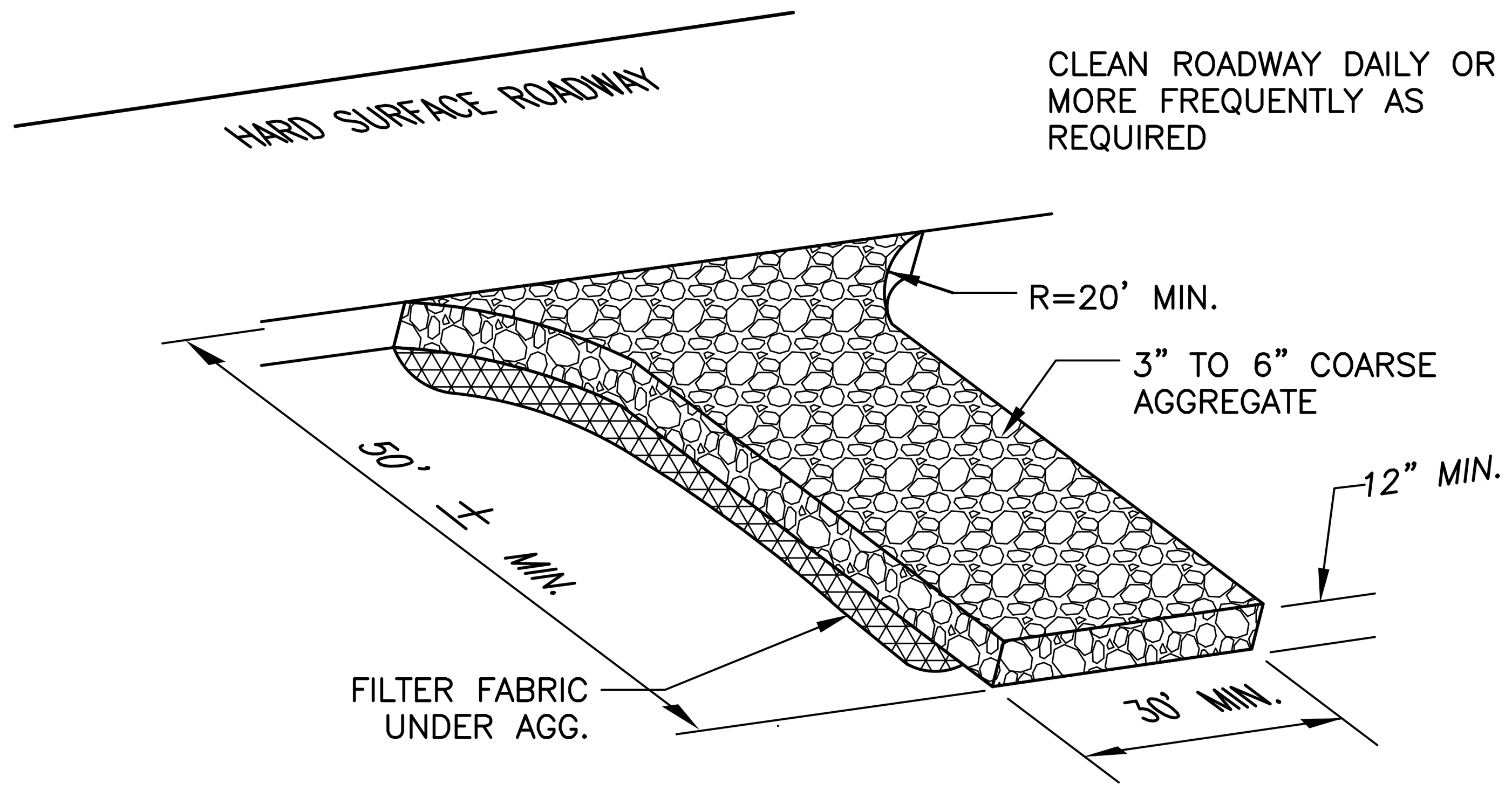
PROJECT NO.:

AH1021-20

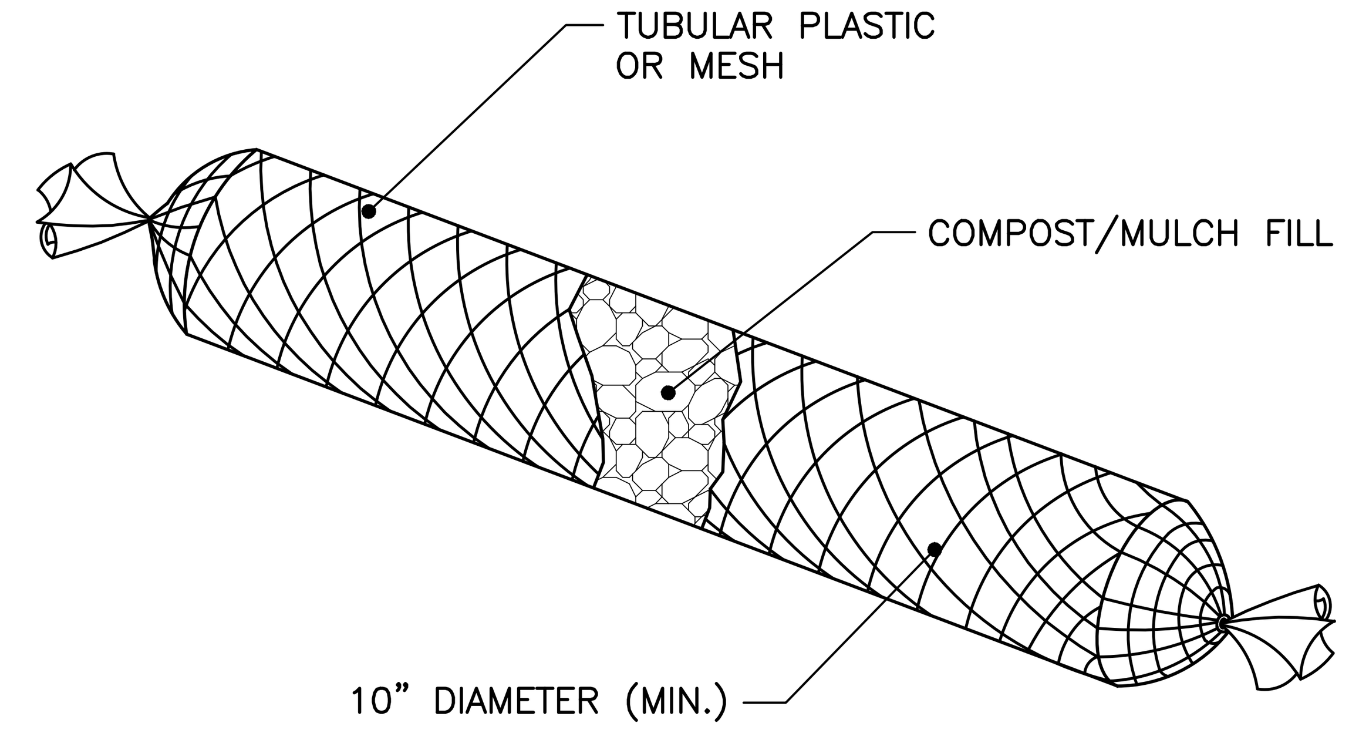
SHEET TITLE:

PAVEMENT AND PAVEMENT MARKING DETAILS

DATE :	DWG. NO.
OCTOBER 2022	C-24
SHEET :	
35 OF 50 SHEETS	



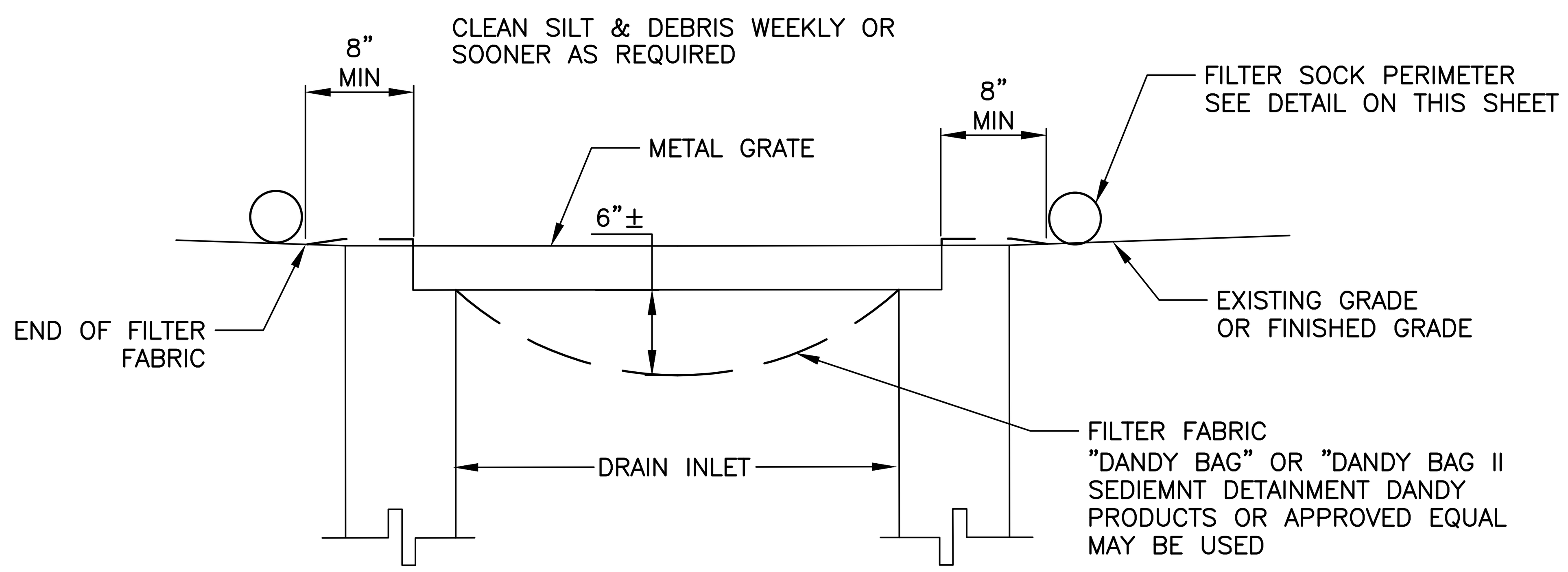
1 / C-25 STABILIZED CONSTRUCTION ENTRANCE/EXIT
SCALE: NOT TO SCALE



2 / C-25 FILTER SOCK DETAIL
SCALE: NOT TO SCALE

FILTER SOCK NOTES:

1. FILTER SOCK SHALL BE "BIOSOCK" COMPOST FILTER (BY ENVIROTECH BIOSOLUTIONS) OR PRE-APPROVED EQUAL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. FILTER SOCK SHALL NOT CONTAIN BIOSOLIDS AND SHALL BE CONSISTENT WITH EPA GUIDELINES.
3. STAKING, WHERE REQUIRED, SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
4. MINIMUM OVERLAP SHALL BE 2' ON THE HORIZONTAL PLANE.



3 / C-25 GRATED INLET AND MANHOLE FILTER DETAIL
SCALE: NOT TO SCALE

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT HILO INTERNATIONAL AIRPORT SOUTH HILO, HAWAII

PROJECT NO.:

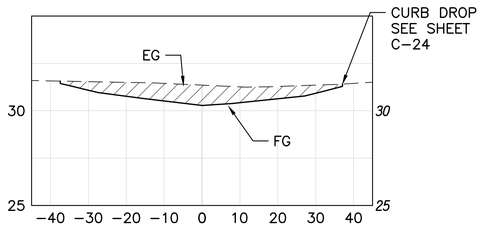
AH1021-20

SHEET TITLE:

BMP DETAILS

DATE : **OCTOBER 2022**
SHEET : 36 OF 50 SHEETS
DWG. NO. C-25

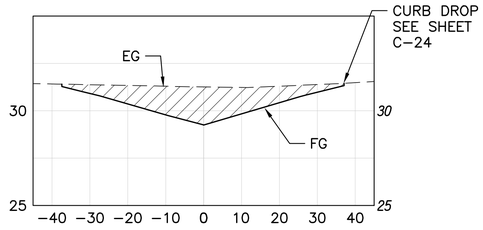
H:\CADD\PROJECT DRAWINGS\1711 DOTA CIP AIRFIELD OPEN END\HILO\PONDING IMPROVEMENTS\DESIGN\TO - PONDING IMPROVEMENTS DESIGN.DWG



EXISTING ELEV.	31.58	31.54	31.50	31.45	31.35	31.26	31.28	31.36	31.44
PROPOSED ELEV.		31.08	30.77	30.52	30.28	30.43	30.63	30.93	

GENERAL AVIATION RAMP GRASS: STA. 0+50.00

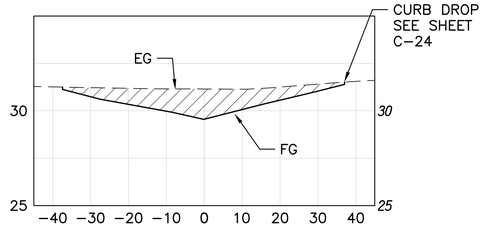
Material(s) at Station 0+50.00			
Material Name	Area	Volume	Cumulative Volume
Cut	51.33	47.53	47.53 CuYd
Fill	0.00	0.00	0.00 CuYd



EXISTING ELEV.	31.42	31.38	31.34	31.30	31.26	31.23	31.30	31.39	31.49
PROPOSED ELEV.		30.91	30.36	29.79	29.25	29.84	30.43	30.98	

GENERAL AVIATION RAMP GRASS: STA. 1+00.00

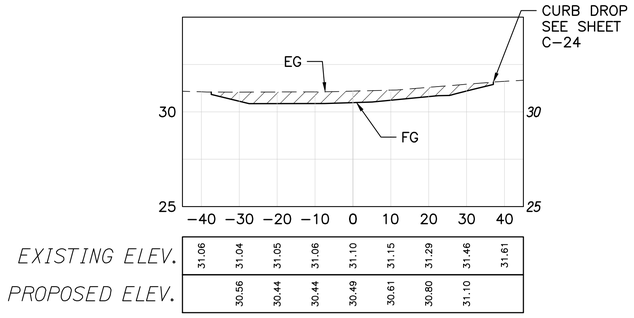
Material(s) at Station 1+00.00			
Material Name	Area	Volume	Cumulative Volume
Cut	75.77	117.69	165.22 CuYd
Fill	0.00	0.00	0.00 CuYd



EXISTING ELEV.	31.26	31.22	31.19	31.16	31.15	31.14	31.25	31.41	31.55
PROPOSED ELEV.		30.75	30.34	29.98	29.56	30.07	30.56	31.04	

GENERAL AVIATION RAMP GRASS: STA. 1+50.00

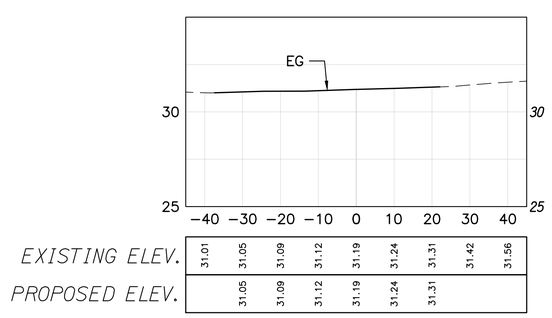
Material(s) at Station 1+50.00			
Material Name	Area	Volume	Cumulative Volume
Cut	62.04	127.61	292.83 CuYd
Fill	0.00	0.00	0.00 CuYd



EXISTING ELEV.	31.06	31.04	31.05	31.06	31.10	31.15	31.29	31.46	31.61
PROPOSED ELEV.		30.56	30.44	30.44	30.49	30.61	30.80	31.10	

GENERAL AVIATION RAMP GRASS: STA. 2+00.00

Material(s) at Station 2+00.00			
Material Name	Area	Volume	Cumulative Volume
Cut	37.76	92.41	385.24 CuYd
Fill	0.00	0.00	0.00 CuYd



EXISTING ELEV.	31.01	31.05	31.09	31.12	31.19	31.24	31.31	31.42	31.56
PROPOSED ELEV.		31.05	31.09	31.12	31.19	31.24	31.31		

GENERAL AVIATION RAMP GRASS: STA. 2+20.00

Material(s) at Station 2+20.00			
Material Name	Area	Volume	Cumulative Volume
Cut	0.00	13.99	399.22 CuYd
Fill	0.00	0.00	0.00 CuYd

4' 0 4' 8'
VERTICAL SCALE 1"=4'

20' 0 20' 40'
HORIZONTAL SCALE 1"=20'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186-C
HAWAII USA

This work was prepared by me or under my supervision.
Exp. 04-30-24

Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

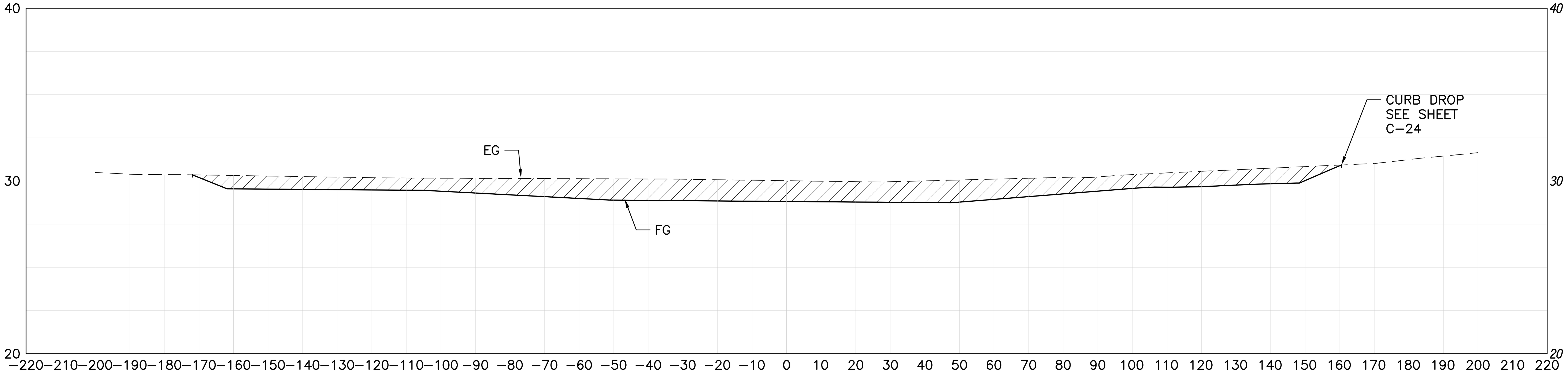
PROJECT NO.:

AH1021-20

SHEET TITLE:

CROSS SECTIONS 1

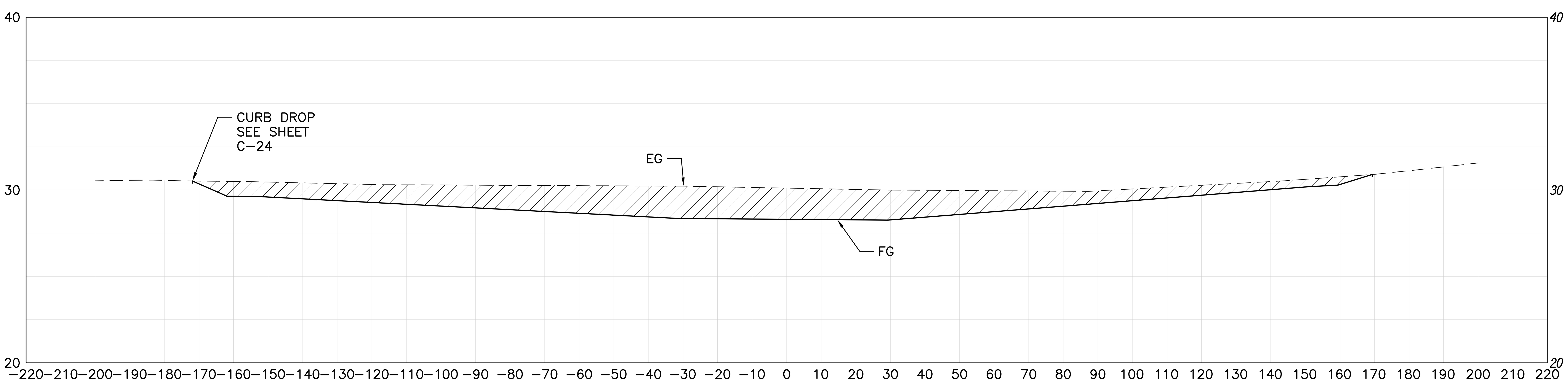
DATE :	DWG. NO.
OCTOBER 2022	C-26
SHEET :	
37 OF 50 SHEETS	



Offset	PROPOSED ELEV.	PROPOSED ELEV.
–200	30.49	
–190	30.39	
–180	30.37	
–170	30.35	30.20
–160	30.32	29.54
–150	30.29	29.53
–140	30.25	29.51
–130	30.22	29.50
–120	30.19	29.48
–110	30.17	29.46
–100	30.16	29.40
–90	30.15	29.30
–80	30.15	29.19
–70	30.14	29.09
–60	30.13	28.98
–50	30.12	28.89
–40	30.11	28.87
–30	30.10	28.86
–20	30.07	28.84
–10	30.04	28.83
0	30.01	28.81
10	29.99	28.80
20	29.96	28.78
30	29.95	28.77
40	30.00	28.75
50	30.06	28.78
60	30.11	28.93
70	30.16	29.09
80	30.21	29.25
90	30.23	29.41
100	30.37	29.57
110	30.47	29.64
120	30.56	29.66
130	30.65	29.76
140	30.74	29.84
150	30.83	30.02
160	30.92	30.88
170	31.01	
180	31.24	
190	31.44	
200	31.64	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 0+50.00

Material(s) at Station 0+50.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	319.53	296.17	296.17 CuYd
Ground Fill	0.00	0.00	0.00 CuYd



Offset	PROPOSED ELEV.	PROPOSED ELEV.
–200	30.54	
–190	30.56	
–180	30.56	
–170	30.52	30.36
–160	30.50	29.64
–150	30.46	29.60
–140	30.41	29.49
–130	30.37	29.39
–120	30.32	29.28
–110	30.30	29.18
–100	30.29	29.07
–90	30.28	28.97
–80	30.27	28.86
–70	30.26	28.76
–60	30.25	28.66
–50	30.24	28.55
–40	30.23	28.45
–30	30.22	28.35
–20	30.19	28.34
–10	30.15	28.32
0	30.11	28.31
10	30.07	28.29
20	30.04	28.28
30	30.00	28.27
40	29.99	28.43
50	29.97	28.59
60	29.96	28.75
70	29.95	28.91
80	29.93	29.07
90	29.95	29.22
100	30.06	29.38
110	30.17	29.54
120	30.27	29.70
130	30.38	29.86
140	30.49	30.02
150	30.62	30.17
160	30.76	30.32
170	30.91	
180	31.12	
190	31.34	
200	31.57	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 1+00.00

Material(s) at Station 1+00.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	395.88	662.41	958.59 CuYd
Ground Fill	0.00	0.00	0.00 CuYd

4' 0 4' 8'
VERTICAL SCALE 1"=4'

20' 0 20' 40'
HORIZONTAL SCALE 1"=20'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
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No. 6186–C
HAWAII U.S.A.

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KEY PLAN / NOTES:

NO.	DATE	REVISIONS

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AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

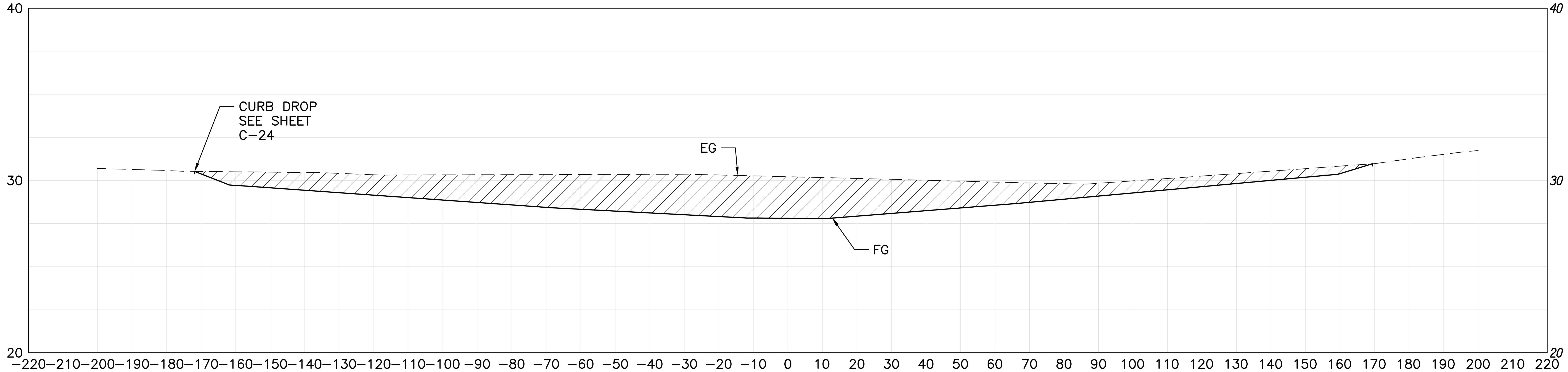
AH1021-20

SHEET TITLE:

CROSS SECTIONS 2

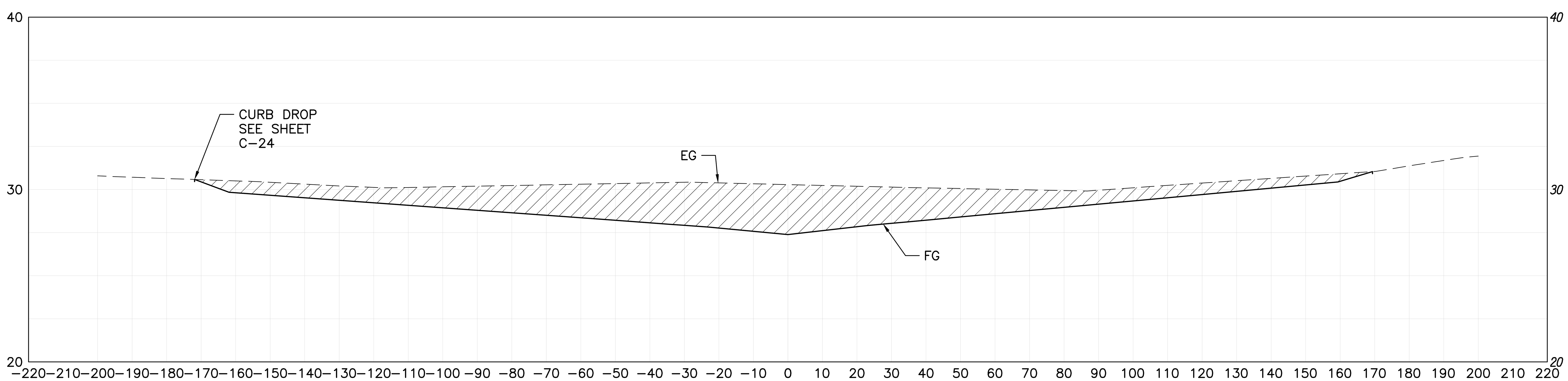
DATE :
OCTOBER 2022
SHEET :
38 OF 50 SHEETS

DWG. NO.
C-27



Offset	PROPOSED ELEV.	PROPOSED ELEV.
–200	30.70	
–190	30.64	
–180	30.58	
–170	30.52	30.38
–160	30.50	29.71
–150	30.48	29.57
–140	30.46	29.43
–130	30.41	29.29
–120	30.33	29.15
–110	30.32	29.00
–100	30.32	28.86
–90	30.33	28.72
–80	30.34	28.58
–70	30.34	28.44
–60	30.35	28.33
–50	30.35	28.22
–40	30.36	28.12
–30	30.36	28.01
–20	30.32	27.91
–10	30.27	27.82
0	30.22	27.80
10	30.17	27.79
20	30.12	27.93
30	30.07	28.09
40	30.01	28.25
50	29.96	28.40
60	29.91	28.56
70	29.85	28.73
80	29.82	28.91
90	29.83	29.09
100	29.98	29.28
110	30.12	29.46
120	30.26	29.64
130	30.40	29.82
140	30.54	30.01
150	30.69	30.19
160	30.83	30.40
170	30.98	
180	31.26	
190	31.52	
200	31.74	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 1+50.00



Offset	PROPOSED ELEV.	PROPOSED ELEV.
–200	30.79	
–190	30.71	
–180	30.64	
–170	30.57	30.44
–160	30.50	29.81
–150	30.42	29.67
–140	30.31	29.52
–130	30.21	29.38
–120	30.12	29.23
–110	30.12	29.09
–100	30.16	28.94
–90	30.20	28.80
–80	30.23	28.65
–70	30.27	28.50
–60	30.31	28.36
–50	30.35	28.21
–40	30.38	28.07
–30	30.42	27.92
–20	30.38	27.76
–10	30.34	27.58
0	30.29	27.39
10	30.24	27.61
20	30.19	27.84
30	30.14	28.04
40	30.10	28.22
50	30.06	28.41
60	30.02	28.60
70	29.98	28.78
80	29.94	28.97
90	29.96	29.15
100	30.10	29.34
110	30.24	29.52
120	30.38	29.71
130	30.51	29.89
140	30.65	30.08
150	30.78	30.26
160	30.92	30.48
170	31.05	
180	31.37	
190	31.69	
200	31.94	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 2+00.00

Material(s) at Station 2+00.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	475.05	877.31	2639.91 CuYd
Ground Fill	0.00	0.00	0.00 CuYd

4' 0 4' 8'
VERTICAL SCALE 1"=4'

20' 0 20' 40'
HORIZONTAL SCALE 1"=20'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

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KEY PLAN / NOTES:

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AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

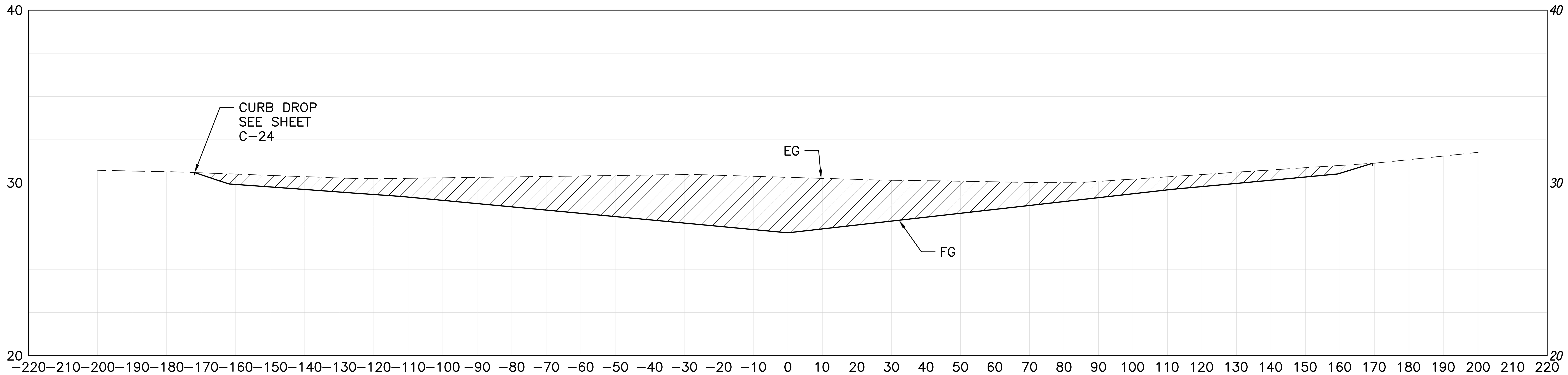
SHEET TITLE:

CROSS SECTIONS 3

DATE :
OCTOBER 2022
SHEET :
39 OF 50 SHEETS

DWG. NO.
C-28

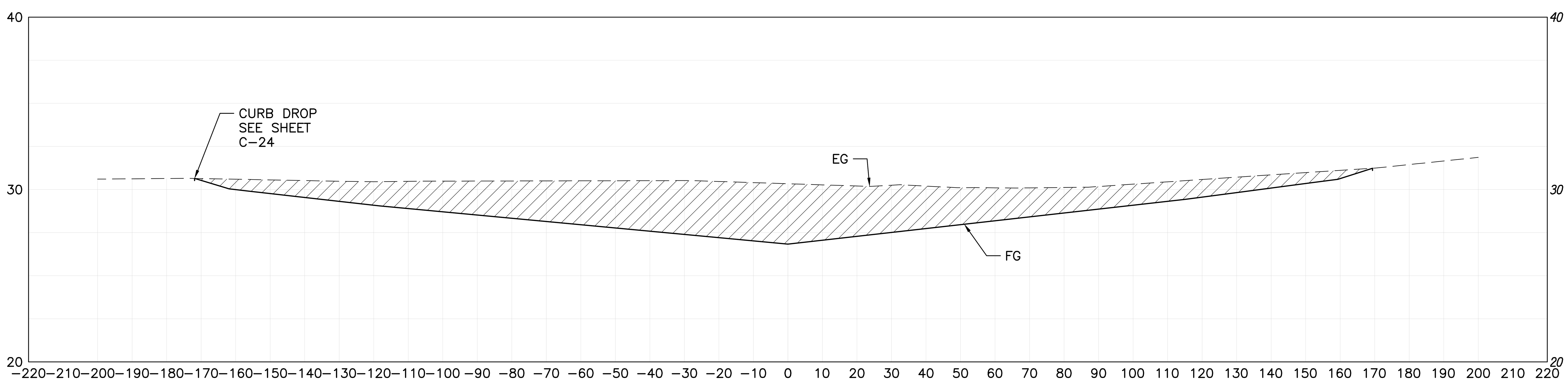
H:\CADD\PROJECT DRAWINGS\1711 DOTA CIP AIRFIELD OPEN END\HILO\PONDING IMPROVEMENTS\DESIGN\TO - PONDING IMPROVEMENTS CROSS SECTIONS.DWG



Offset	PROPOSED ELEV.	PROPOSED ELEV.
−200	30.73	
−190	30.69	
−180	30.65	
−170	30.58	30.47
−160	30.51	29.91
−150	30.44	29.77
−140	30.36	29.62
−130	30.29	29.47
−120	30.24	29.33
−110	30.27	29.18
−100	30.29	28.99
−90	30.32	28.80
−80	30.35	28.61
−70	30.37	28.42
−60	30.40	28.24
−50	30.43	28.05
−40	30.46	27.86
−30	30.48	27.67
−20	30.44	27.49
−10	30.38	27.30
0	30.32	27.11
10	30.26	27.34
20	30.20	27.56
30	30.16	27.79
40	30.13	28.01
50	30.10	28.24
60	30.06	28.47
70	30.03	28.69
80	30.04	28.92
90	30.09	29.14
100	30.22	29.37
110	30.35	29.60
120	30.48	29.79
130	30.62	29.97
140	30.75	30.16
150	30.88	30.34
160	31.01	30.56
170	31.14	
180	31.35	
190	31.55	
200	31.77	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 2+50.00

Material(s) at Station 2+50.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	520.63	921.92	3561.82 CuYd
Ground Fill	0.00	0.00	0.00 CuYd



Offset	PROPOSED ELEV.	PROPOSED ELEV.
−200	30.60	
−190	30.62	
−180	30.64	
−170	30.64	30.53
−160	30.60	29.99
−150	30.56	29.77
−140	30.52	29.54
−130	30.48	29.32
−120	30.45	29.09
−110	30.48	28.90
−100	30.49	28.71
−90	30.49	28.52
−80	30.50	28.33
−70	30.50	28.15
−60	30.50	27.96
−50	30.51	27.77
−40	30.51	27.58
−30	30.52	27.40
−20	30.47	27.21
−10	30.40	27.02
0	30.34	26.83
10	30.27	27.06
20	30.21	27.29
30	30.25	27.51
40	30.20	27.74
50	30.11	27.96
60	30.10	28.19
70	30.09	28.41
80	30.12	28.64
90	30.18	28.87
100	30.31	29.09
110	30.45	29.32
120	30.58	29.56
130	30.72	29.82
140	30.85	30.09
150	30.98	30.35
160	31.11	30.64
170	31.24	
180	31.45	
190	31.66	
200	31.86	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 3+00.00

Material(s) at Station 3+00.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	622.95	1058.86	4620.69 CuYd
Ground Fill	0.00	0.00	0.00 CuYd

4' 0 4' 8'
VERTICAL SCALE 1"=4'

20' 0 20' 40'
HORIZONTAL SCALE 1"=20'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186–C
HAWAII U.S.A.

This work was prepared by me or under my supervision.
Exp. 04–30–24

Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

SHEET TITLE:

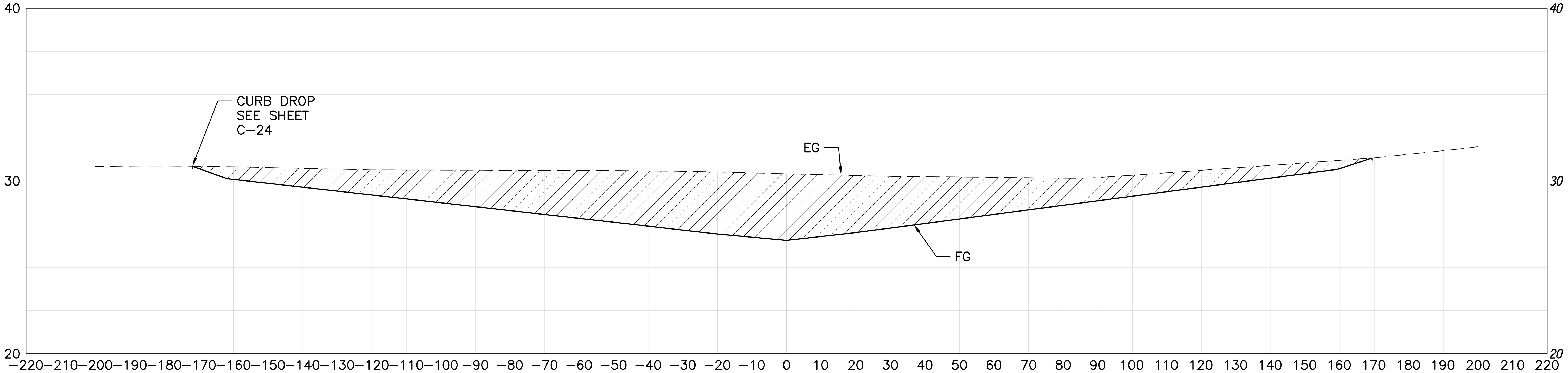
CROSS SECTIONS 4

DATE : **OCTOBER 2022**

SHEET : 40 OF 50 SHEETS

DWG. NO. C-29

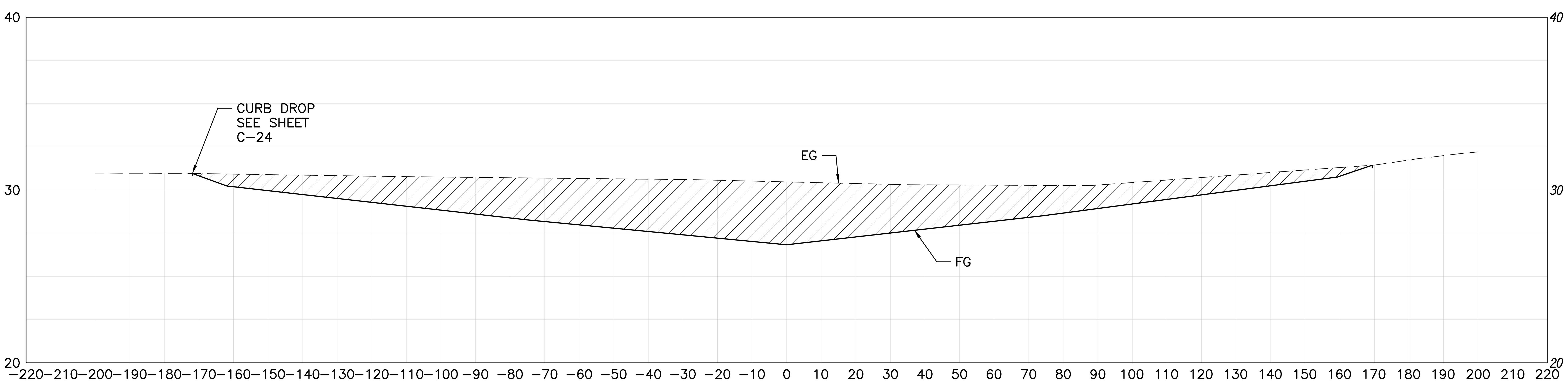
H:\CADD\PROJECT DRAWINGS\1711 DOTA CIP AIRFIELD OPEN END\HILO\PONDING IMPROVEMENTS\DESIGN\TO - PONDING IMPROVEMENTS CROSS SECTIONS.DWG



Station	PROPOSED ELEV.	PROPOSED ELEV.
−200	30.84	
−190	30.86	
−180	30.86	
−170	30.85	30.72
−160	30.82	30.09
−150	30.78	29.87
−140	30.73	29.64
−130	30.68	29.41
−120	30.64	29.19
−110	30.63	28.96
−100	30.63	28.74
−90	30.62	28.51
−80	30.62	28.29
−70	30.61	28.06
−60	30.61	27.83
−50	30.60	27.61
−40	30.58	27.38
−30	30.56	27.16
−20	30.52	26.93
−10	30.47	26.74
0	30.42	26.56
10	30.37	26.78
20	30.32	27.01
30	30.27	27.27
40	30.25	27.54
50	30.23	27.80
60	30.21	28.06
70	30.19	28.33
80	30.16	28.59
90	30.20	28.85
100	30.34	29.11
110	30.47	29.38
120	30.61	29.64
130	30.76	29.90
140	30.90	30.17
150	31.05	30.43
160	31.19	30.72
170	31.34	
180	31.54	
190	31.75	
200	31.99	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 3+50.00

Material(s) at Station 3+50.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	675.72	1202.47	5823.16 CuYd
Ground Fill	0.00	0.00	0.00 CuYd



Station	PROPOSED ELEV.	PROPOSED ELEV.
−200	30.98	
−190	30.97	
−180	30.97	
−170	30.95	30.82
−160	30.92	30.19
−150	30.89	29.96
−140	30.86	29.74
−130	30.83	29.51
−120	30.80	29.29
−110	30.78	29.06
−100	30.75	28.84
−90	30.73	28.61
−80	30.71	28.38
−70	30.69	28.17
−60	30.67	27.98
−50	30.65	27.79
−40	30.63	27.60
−30	30.61	27.41
−20	30.57	27.21
−10	30.52	27.02
0	30.47	26.84
10	30.42	27.06
20	30.38	27.29
30	30.33	27.51
40	30.30	27.74
50	30.29	27.97
60	30.28	28.19
70	30.27	28.42
80	30.26	28.67
90	30.29	28.93
100	30.43	29.19
110	30.58	29.46
120	30.72	29.72
130	30.87	29.98
140	31.01	30.24
150	31.16	30.51
160	31.30	30.80
170	31.44	
180	31.74	
190	31.99	
200	32.21	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 4+00.00

Material(s) at Station 4+00.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	657.92	1234.85	7058.00 CuYd
Ground Fill	0.00	0.00	0.00 CuYd

4' 0 4' 8'
VERTICAL SCALE 1"=4'

20' 0 20' 40'
HORIZONTAL SCALE 1"=20'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186-C
HAWAII U.S.A.

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Exp. 04-30-24

Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

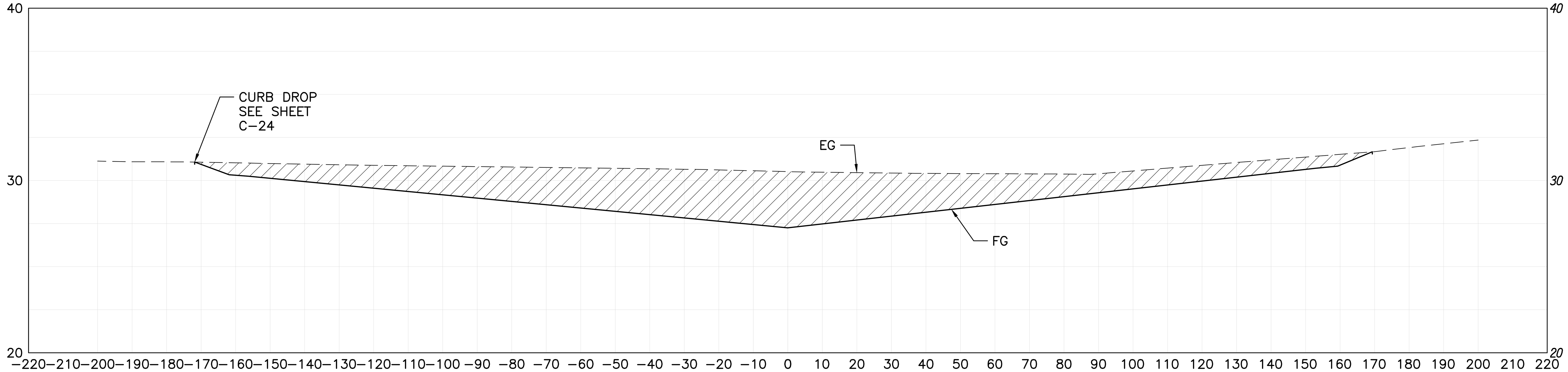
AH1021-20

SHEET TITLE:

CROSS SECTIONS 5

DATE : OCTOBER 2022
SHEET : 41 OF 50 SHEETS
DWG. NO. C-30

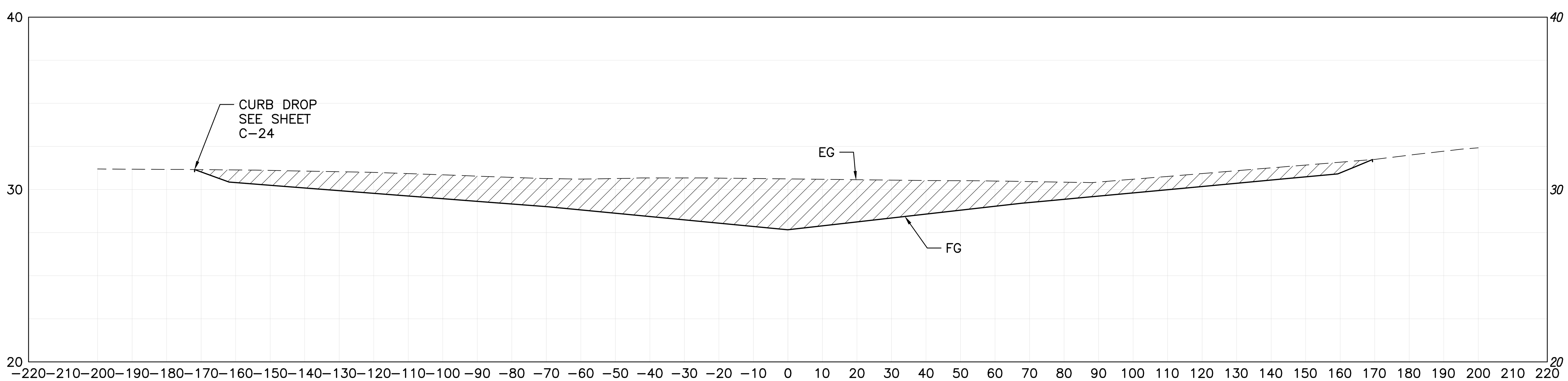
H:\CADD\PROJECT DRAWINGS\1711 DOTA CIP AIRFIELD OPEN END\HILO\PONDING IMPROVEMENTS\DESIGN\TO - PONDING IMPROVEMENTS CROSS SECTIONS.DWG



Offset	PROPOSED ELEV.	PROPOSED ELEV.
−200	31.12	
−190	31.09	
−180	31.08	
−170	31.06	30.93
−160	31.02	30.30
−150	30.99	30.12
−140	30.95	29.93
−130	30.91	29.74
−120	30.88	29.55
−110	30.85	29.36
−100	30.83	29.17
−90	30.81	28.97
−80	30.78	28.78
−70	30.76	28.59
−60	30.73	28.40
−50	30.71	28.21
−40	30.68	28.01
−30	30.65	27.82
−20	30.61	27.63
−10	30.56	27.44
0	30.51	27.25
10	30.48	27.48
20	30.45	27.71
30	30.43	27.93
40	30.41	28.16
50	30.40	28.38
60	30.39	28.61
70	30.38	28.84
80	30.37	29.06
90	30.39	29.29
100	30.55	29.51
110	30.72	29.74
120	30.88	29.97
130	31.04	30.19
140	31.20	30.42
150	31.36	30.65
160	31.52	30.89
170	31.67	
180	31.91	
190	32.13	
200	32.34	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 4+50.00

Material(s) at Station 4+50.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	582.04	1148.11	8206.11 CuYd
Ground Fill	0.00	0.00	0.00 CuYd



Offset	PROPOSED ELEV.	PROPOSED ELEV.
−200	31.19	
−190	31.18	
−180	31.17	
−170	31.15	31.02
−160	31.14	30.40
−150	31.11	30.25
−140	31.07	30.09
−130	31.03	29.94
−120	30.99	29.78
−110	30.92	29.63
−100	30.85	29.47
−90	30.78	29.31
−80	30.71	29.16
−70	30.64	29.00
−60	30.61	28.81
−50	30.64	28.62
−40	30.67	28.43
−30	30.67	28.24
−20	30.66	28.05
−10	30.64	27.86
0	30.62	27.67
10	30.59	27.90
20	30.57	28.12
30	30.54	28.35
40	30.52	28.57
50	30.51	28.80
60	30.49	29.03
70	30.46	29.24
80	30.43	29.43
90	30.43	29.62
100	30.60	29.80
110	30.76	29.99
120	30.93	30.18
130	31.09	30.36
140	31.26	30.55
150	31.42	30.74
160	31.59	30.97
170	31.75	
180	31.99	
190	32.22	
200	32.42	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 5+00.00

Material(s) at Station 5+00.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	497.02	999.12	9205.23 CuYd
Ground Fill	0.00	0.00	0.00 CuYd

VERTICAL SCALE 1"=4'

HORIZONTAL SCALE 1"=20'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186-C
HAWAII U.S.A.

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Exp. 04-30-24

Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

**AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII**

PROJECT NO.:

AH1021-20

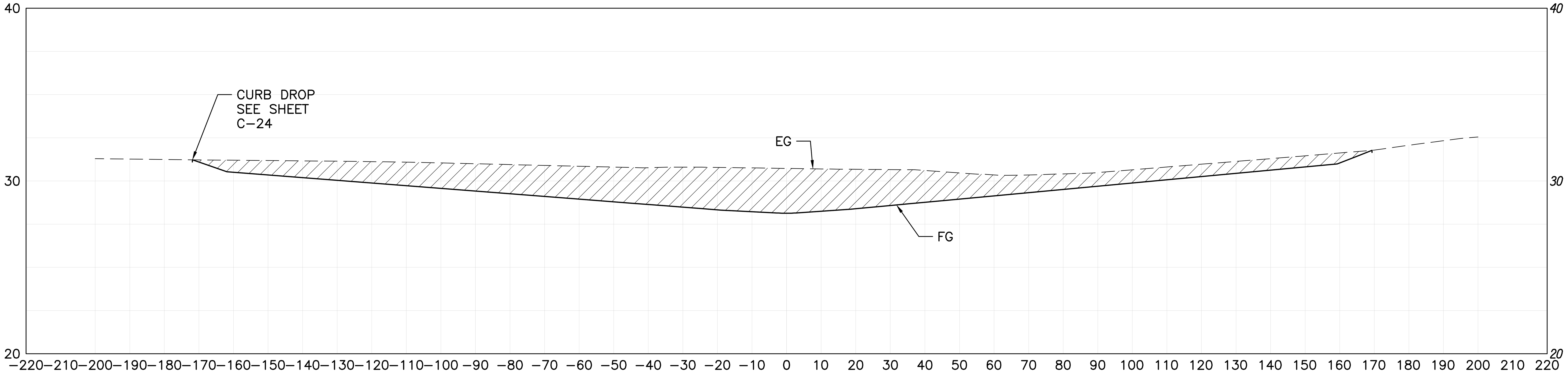
SHEET TITLE:

CROSS SECTIONS 6

DATE : **OCTOBER 2022**

SHEET : 42 OF 50 SHEETS

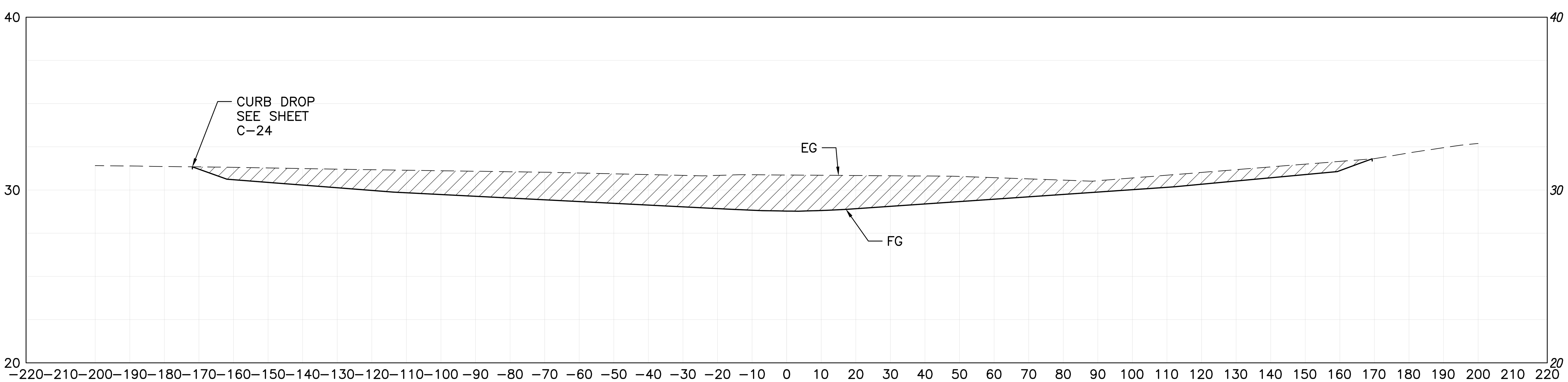
DWG. NO. C-31



Offset	PROPOSED ELEV.	PROPOSED ELEV.
–200	31.29	
–190	31.27	
–180	31.24	
–170	31.22	31.09
–160	31.20	30.50
–150	31.18	30.34
–140	31.16	30.19
–130	31.14	30.03
–120	31.12	29.88
–110	31.09	29.72
–100	31.04	29.57
–90	30.99	29.41
–80	30.95	29.26
–70	30.90	29.10
–60	30.85	28.95
–50	30.80	28.79
–40	30.77	28.64
–30	30.80	28.48
–20	30.78	28.33
–10	30.76	28.22
0	30.73	28.13
10	30.70	28.25
20	30.67	28.39
30	30.66	28.58
40	30.61	28.76
50	30.47	28.95
60	30.35	29.14
70	30.35	29.32
80	30.41	29.51
90	30.48	29.70
100	30.65	29.88
110	30.81	30.07
120	30.97	30.26
130	31.13	30.44
140	31.29	30.63
150	31.45	30.81
160	31.62	31.04
170	31.79	
180	32.07	
190	32.33	
200	32.54	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 5+50.00

Material(s) at Station 5+50.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	477.26	902.11	10107.34 CuYd
Ground Fill	0.00	0.00	0.00 CuYd



Offset	PROPOSED ELEV.	PROPOSED ELEV.
–200	31.41	
–190	31.39	
–180	31.36	
–170	31.34	31.21
–160	31.31	30.60
–150	31.28	30.44
–140	31.24	30.29
–130	31.21	30.13
–120	31.17	29.98
–110	31.14	29.84
–100	31.12	29.74
–90	31.09	29.64
–80	31.06	29.54
–70	31.03	29.43
–60	30.99	29.33
–50	30.94	29.23
–40	30.89	29.13
–30	30.85	29.03
–20	30.85	28.92
–10	30.88	28.83
0	30.87	28.78
10	30.85	28.81
20	30.84	28.92
30	30.83	29.06
40	30.81	29.19
50	30.78	29.33
60	30.71	29.47
70	30.64	29.61
80	30.57	29.74
90	30.54	29.88
100	30.70	30.02
110	30.86	30.16
120	31.02	30.33
130	31.18	30.52
140	31.34	30.71
150	31.50	30.89
160	31.66	31.12
170	31.82	
180	32.15	
190	32.45	
200	32.70	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 6+00.00

Material(s) at Station 6+00.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	422.31	832.93	10940.27 CuYd
Ground Fill	0.00	0.00	0.00 CuYd

4' 0 4' 8'
VERTICAL SCALE 1"=4'

20' 0 20' 40'
HORIZONTAL SCALE 1"=20'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186-C
HAWAII U.S.A.

This work was prepared by me or under my supervision.
Exp. 04–30–24

Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

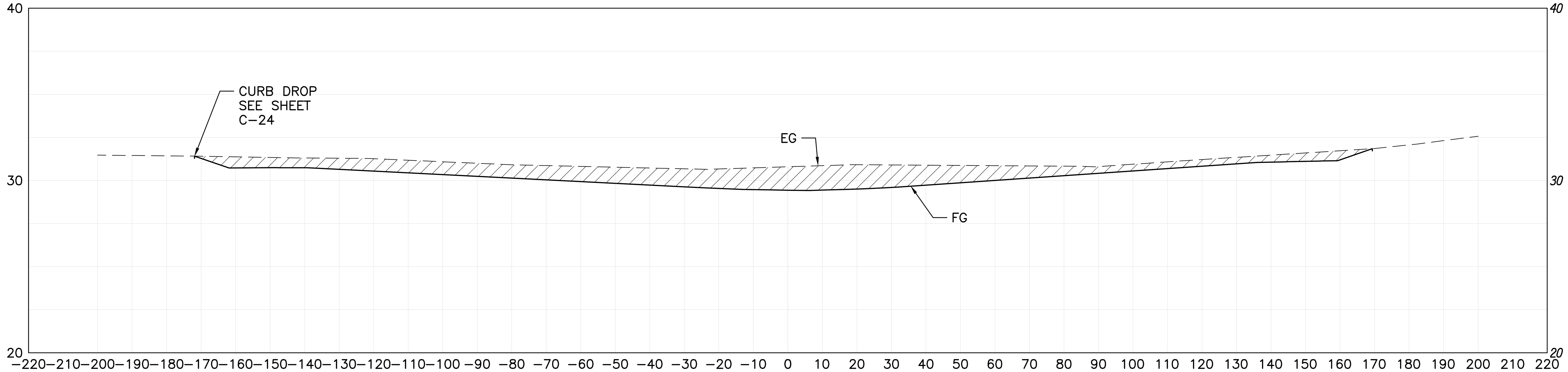
AH1021-20

SHEET TITLE:

CROSS SECTIONS 7

DATE :
OCTOBER 2022
SHEET :
43 OF 50 SHEETS

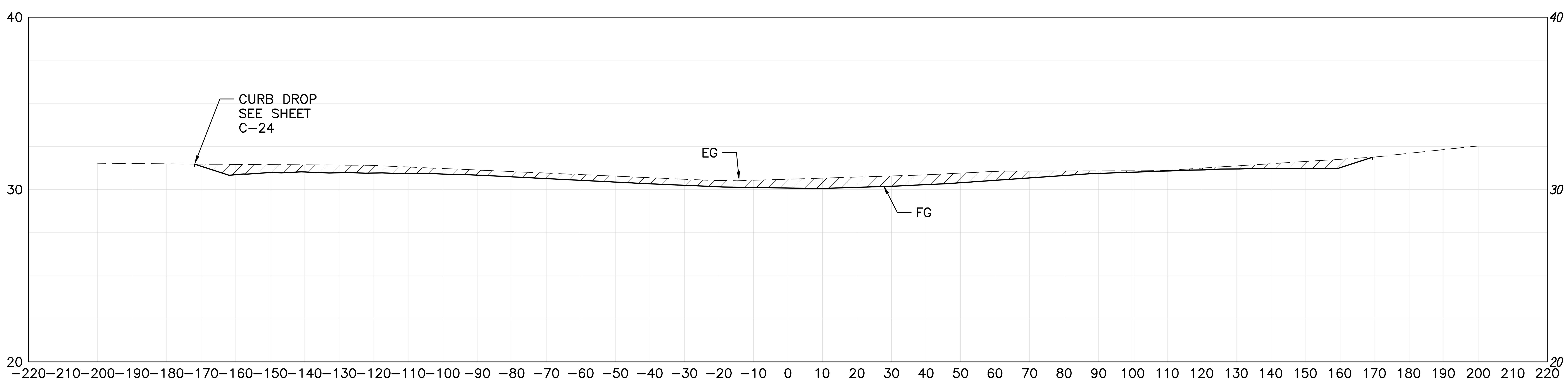
DWG. NO.
C-32



	PROPOSED ELEV.	PROPOSED ELEV.
−200	31.47	
−190	31.45	
−180	31.43	
−170	31.40	31.28
−160	31.37	30.73
−150	31.33	30.75
−140	31.30	30.74
−130	31.29	30.65
−120	31.26	30.55
−110	31.18	30.44
−100	31.09	30.34
−90	31.00	30.24
−80	30.91	30.14
−70	30.86	30.04
−60	30.82	29.93
−50	30.77	29.83
−40	30.72	29.73
−30	30.68	29.63
−20	30.67	29.54
−10	30.73	29.47
0	30.80	29.43
10	30.86	29.44
20	30.92	29.50
30	30.90	29.60
40	30.89	29.73
50	30.87	29.86
60	30.86	30.00
70	30.85	30.14
80	30.83	30.28
90	30.81	30.42
100	30.94	30.55
110	31.08	30.69
120	31.22	30.83
130	31.34	30.97
140	31.47	31.06
150	31.60	31.11
160	31.72	31.20
170	31.85	
180	32.06	
190	32.31	
200	32.57	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 6+50.00

Material(s) at Station 6+50.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	265.18	636.56	11576.83 CuYd
Ground Fill	0.00	0.00	0.00 CuYd



	PROPOSED ELEV.	PROPOSED ELEV.
−200	31.53	
−190	31.51	
−180	31.49	
−170	31.47	31.35
−160	31.46	30.86
−150	31.45	30.99
−140	31.43	31.02
−130	31.42	30.97
−120	31.39	30.96
−110	31.31	30.92
−100	31.22	30.90
−90	31.13	30.84
−80	31.04	30.74
−70	30.95	30.64
−60	30.86	30.54
−50	30.78	30.43
−40	30.69	30.34
−30	30.60	30.25
−20	30.53	30.16
−10	30.54	30.12
0	30.60	30.09
10	30.66	30.07
20	30.72	30.13
30	30.79	30.19
40	30.85	30.28
50	30.95	30.40
60	31.05	30.54
70	31.07	30.67
80	31.08	30.81
90	31.08	30.94
100	31.09	31.01
110	31.11	31.08
120	31.24	31.14
130	31.37	31.19
140	31.50	31.23
150	31.63	31.23
160	31.76	31.27
170	31.88	
180	32.10	
190	32.32	
200	32.53	

ARMY NATIONAL GUARD AVIATION RAMP GRASS: STA. 7+00.00

Material(s) at Station 7+00.00			
Material Name	Area	Volume	Cumulative Volume
Ground Removed	125.51	361.75	11938.59 CuYd
Ground Fill	0.00	0.00	0.00 CuYd

4' 0 4' 8'
VERTICAL SCALE 1"=4'

20' 0 20' 40'
HORIZONTAL SCALE 1"=20'

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

NEAL S. FUKUMOTO
LICENSED PROFESSIONAL ENGINEER
No. 6186-C
HAWAII U.S.A.

This work was prepared by me or under my supervision.
Exp. 04-30-24

Wesley R. Segawa & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RF	RF	CD	NF

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

PROJECT TITLE :

DRAINAGE & WIND CONE IMPROVEMENTS

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

SHEET TITLE:

CROSS SECTIONS 8

DATE :
OCTOBER 2022
SHEET :
44 OF 50 SHEETS

DWG. NO.
C-33

H:\CADD\PROJECT DRAWINGS\1711 DOTA CIP AIRFIELD OPEN END\HILO\PONDING IMPROVEMENTS\DESIGN\TO - PONDING IMPROVEMENTS CROSS SECTIONS.DWG

ELECTRICAL SYMBOLS

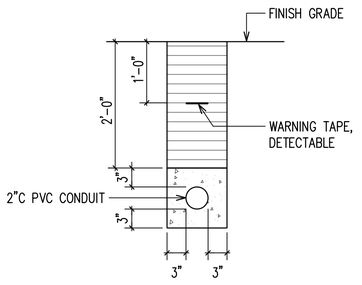
SYMBOL	DESCRIPTION
	WIND CONE
	L-867 LIGHT BASE
	EXISTING RUNWAY LIGHT FIXTURE
	EXISTING CONDUIT
	CONDUIT CONCEALED BELOW GRADE
1	BOX NOTE INDICATOR; NOTE 1 INDICATED
A	DUCT SECTION DESIGNATOR; SECTION "A" INDICATED

GENERAL NOTES:

1. PLANS DO NOT INDICATE COMPLETE EXISTING ELECTRICAL CONDITIONS. CONTRACTOR SHALL VISIT JOBSITE TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AND EXTENT OF DEMOLITION AND NEW WORK PRIOR TO THE START OF WORK.
2. PRIOR TO THE START OF WORK, CONTRACTOR SHALL VISIT JOBSITE AND REPORT ANY DISCREPANCIES AND/OR DIFFERENCES IN DRAWINGS, IN RESPECT TO EXISTING CONDITION, TO THE ENGINEER.
3. CONTRACTOR SHALL RESOLVE ALL DISCREPANCIES AND QUESTIONS PRIOR TO THE START OF WORK. NO EXTRA PAYMENT SHALL BE ALLOWED ON ACCOUNT OF WORK MADE NECESSARY BY CONTRACTOR'S FAILURE TO VISIT THE SITE AND/OR FAILURE TO RESOLVE DISCREPANCIES AND QUESTIONS.
4. ALL POWER OUTAGES SHALL BE COORDINATED AND APPROVED BY THE ENGINEER. OUTAGES SHALL BE SCHEDULED AND LIMITED PER THE STATE'S REQUIREMENTS.
5. BEFORE ANY ELECTRICAL WIRING IS CUT, CONTRACTOR SHALL VERIFY USAGE OF WIRING TO ENSURE THAT REQUIRED SERVICES ARE NOT DISCONTINUED.
6. RETURN ALL SALVABLE APPARATUS TO THE STATE, AS DETERMINED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE STATE. DISPOSE OF ALL UNWANTED MATERIALS.
7. FOR EXISTING CIRCUITS WHERE SOME ELECTRICAL ITEMS ARE REMOVED, PROVIDE ALL NECESSARY RACEWAYS, WIRES, BOXES, AND ETC. PER NEC REQUIREMENTS TO ENSURE ELECTRICAL CONTINUITY AND PROPER OPERATION OF REMAINING CIRCUIT COMPONENTS.

AIRFIELD LIGHTING SYSTEM NOTES:

1. CONTRACTOR SHALL ENSURE CONTINUOUS OPERATION OF ALL EXISTING SYSTEMS. EXCAVATION WILL BE BY SUCH METHOD THAT WILL ENSURE CONTINUED OPERATION OF THE EXISTING SYSTEM DURING INSTALLATION AND COMPLETION OF THE NEW WORK.
2. THE CONTRACTOR SHALL ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM (INCLUDING FAA APPROVED EQUIPMENT) ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE EXISTING SYSTEM. ANY NONCOMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR SHALL BE REPLACED BY HIM AT NO ADDITIONAL COST WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER.
3. IN CASE THE CONTRACTOR SELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTERS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATIONS, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.
4. THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
5. USE FAA APPROVED EQUIPMENT AS LISTED IN AC 150/5345-1 (CURRENT EDITION).
6. A MINIMUM OF THREE COPIES OF INSTRUCTION MANUAL SHALL BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE MANUALS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATOR, PAPI, REIL, ETC. AS A MINIMUM SHALL CONTAIN THE FOLLOWING:
   - (A) A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.
   - (B) THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.
   - (C) INSTALLATION INSTRUCTIONS.
   - (D) START-UP INSTRUCTIONS.
   - (E) PREVENTATIVE MAINTENANCE REQUIREMENTS.
   - (F) CHART FOR TROUBLESHOOTING.
   - (G) COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT-"BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OR THE NARRATIVE SHALL SHOW VOLTAGES/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLESHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL MODES OF OPERATION, SUCH AS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS SHALL BE INDICATED FOR ALL THE DIFFERENT MODES.
   - (H) PARTS LIST WHICH WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS, SUCH AS RESISTORS, DIODES, ETC. IT SHALL INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.
   - (I) SAFETY INSTRUCTIONS
7. UNLESS OTHERWISE NOTED, ALL UNDERGROUND FIELD POWER MULTIPLE AND SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED L-824 TYPE. INSULATION VOLTAGE AND SIZE SHALL BE AS SPECIFIED.
8. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
9. THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST $1\frac{1}{2}$ INCHES ON EACH SIDE OF THE JOINT.
10. THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE.
11. THE ID OF THE PRIMARY L-823 FIELD ATTACHED CONNECTORS SHALL MATCH THE CABLE ID TO PROVIDE A WATERTIGHT CABLE ENTRANCE. THIS ENTRANCE SHALL BE ENCAPSULATED IN A HEAT SHRINKABLE TUBING WITH CONTINUOUS, FACTORY APPLIED INTERNAL ADHESIVE.
12. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS "A" (FACTORY MOLDED).
13. THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE WIREWAYS LEADING TO PAPI/REIL EQUIPMENT.
14. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
15. A SLACK OF 3 FEET, MINIMUM, SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION.
16. L-867 BASES SHALL BE SIZE B, 24" DEEP, UNLESS OTHERWISE NOTED.
17. ENTRANCES INTO L-867 BASES SHALL BE PLUGGED FROM THE INSIDE WITH DUCT SEAL.
18. GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
19. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND FRANGIBLE COUPLING THREADS.
20. THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
21. CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKERS, ETC. SHALL BE 3000 PSI MIN., AIR-ENTRAINED.
22. GROUND ALL NON-CURRENT-CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT BY USING #6 AWG BARE COPPER WIRE TO BE RUN INSIDE CABINETS AND IN CONDUITS TOGETHER WITH OTHER WIRES.
23. ALL GROUND CONNECTIONS TO GROUND RODS, BUSSES, PANELS, ETC. SHALL BE MADE WITH PRESSURE TYPE SOLDERLESS LUGS AND GROUND CLAMPS. SOLDERED OR BOLT AND WASHER TYPE CONNECTIONS ARE NOT ACCEPTABLE. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS.
24. TOPS OF GROUND RODS SHALL BE 10 INCHES BELOW GRADE.
25. THE RESISTANCE TO GROUND OF THE COUNTERPOISE SYSTEM, OR AT ISOLATION LOCATIONS, SUCH AS AIRPORT BEACON SHALL NOT EXCEED 25 OHMS.
26. THE CONTRACTOR SHALL PROVIDE NEW ISOLATION TRANSFORMERS WITH ALL AIRFIELD LIGHTING DEVICES SHOWN ON THE DRAWINGS.



SECTION (A)

BACKFILL NOTES:

TYPE "A" BACKFILL – EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX. & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.

CONCRETE – 3" ENCASEMENT, 4000 psi COMPRESSIVE STRENGTH @ 28 DAYS.

SPECIAL NOTES:

1. THE CONTRACTOR SHALL MAINTAIN AVIATION SAFETY IN THE AIR OPERATIONS AREA (AOA) AT ALL TIMES DURING CONSTRUCTION ACTIVITY BY COMPLYING WITH FAA ADVISORY CIRCULAR 150/5370-2G, OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION (INCLUDED IN SPECIFICATIONS).
2. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE PROJECT'S CONSTRUCTION SAFETY AND PHASING PLAN (CSPP).
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SERVICES OF EFFICIENT, QUALIFIED PERSONNEL EQUIPPED W/ 2-WAY RADIO EQPT FOR CONTINUOUS MONITORING AND COMMUNICATIONS W/ THE CONTROL TOWER. ALL PERSONNEL SHALL ATTEND AN AOA DRIVER TRAINING CLASS TO BECOME FAMILIAR WITH AIRFIELD SIGNS AND MARKINGS AND BE ABLE TO COMMUNICATE WITH THE AIR TRAFFIC CONTROL TOWER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING UP AND TAKING DOWN LIGHTED "X"'s AT EACH END OF A CLOSED RUNWAY.
5. REFER TO THE SPECIFICATIONS, SECTION 8.21 OF THE AIRPORTS DIVISION SUPPLEMENT (ADS), FOR VEHICLE/PERSONNEL REQUIREMENTS IN RESTRICTED AIR OPERATIONS AND MOVEMENT AREAS.
6. ANY DAMAGES TO EXIST CABLES AND/OR UTILITY LINES, WHETHER OR NOT SHOWN, SHALL BE REPAIRED AT NO COST TO THE STATE.
7. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL REMOVE ALL EXCAVATED MATERIALS FROM THE RUNWAY AND TAXIWAY AREAS. UNLESS REQUIRED FOR SAFETY, THE CONTRACTOR SHALL CLEAN AND REMOVE ALL DEBRIS, UNINSTALLED MATERIALS, BARRICADES, ENCLOSURES AND OTHER OBSTACLES TO NORMAL OPERATIONS.
8. USE OF STEEL PLATES TO COVER OPEN TRENCHES SHALL NOT BE ALLOWED. CONTRACTOR SHALL FILL AND COMPACT ALL TRENCHES AT THE END OF EACH WORK DAY.

1/E-1 DUCT SECTION DETAIL
NOT TO SCALE

STATE OF HAWAII 1959

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

BILLY J. ORNELLAS
LICENSED PROFESSIONAL ENGINEER
No. 11658-E
HAWAII, U.S.A.

This work was prepared by me or under my supervision.
Exp. 04-30-24

2022.10.13
Roger N.S. Ho & Associates, Inc.

DSGN.	DRWN.	CHKD.	APPD.
RY	CAD	BO	BO

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

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AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-20

SHEET TITLE:

ELECTRICAL SYMBOLS, GENERAL NOTES, AIRFIELD LIGHTING SYSTEM NOTES, DUCT SECTION DETAILS

DATE :
OCTOBER 2022
SHEET :
45 OF 50 SHEETS

DWG. NO.
E-1

RUNWAY 8 ELECTRICAL PLAN, SEE 1 / E-3

RUNWAY 21 ELECTRICAL PLAN, SEE 1 / E-4

RUNWAY 26 ELECTRICAL PLAN, SEE 1 / E-5

NORTH

ELECTRICAL SITE PLAN

SCALE: 1"=500'

500' 250' 0 500' 1000' 1500'

SCALE: 1"=500'

GRAPHIC SCALE

STATE OF HAWAII 1959

Airports Division

DEPARTMENT OF TRANSPORTATION
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ELECTRICAL SITE PLAN

DATE :	DWG. NO.
OCTOBER 2022	E-2
SHEET :	
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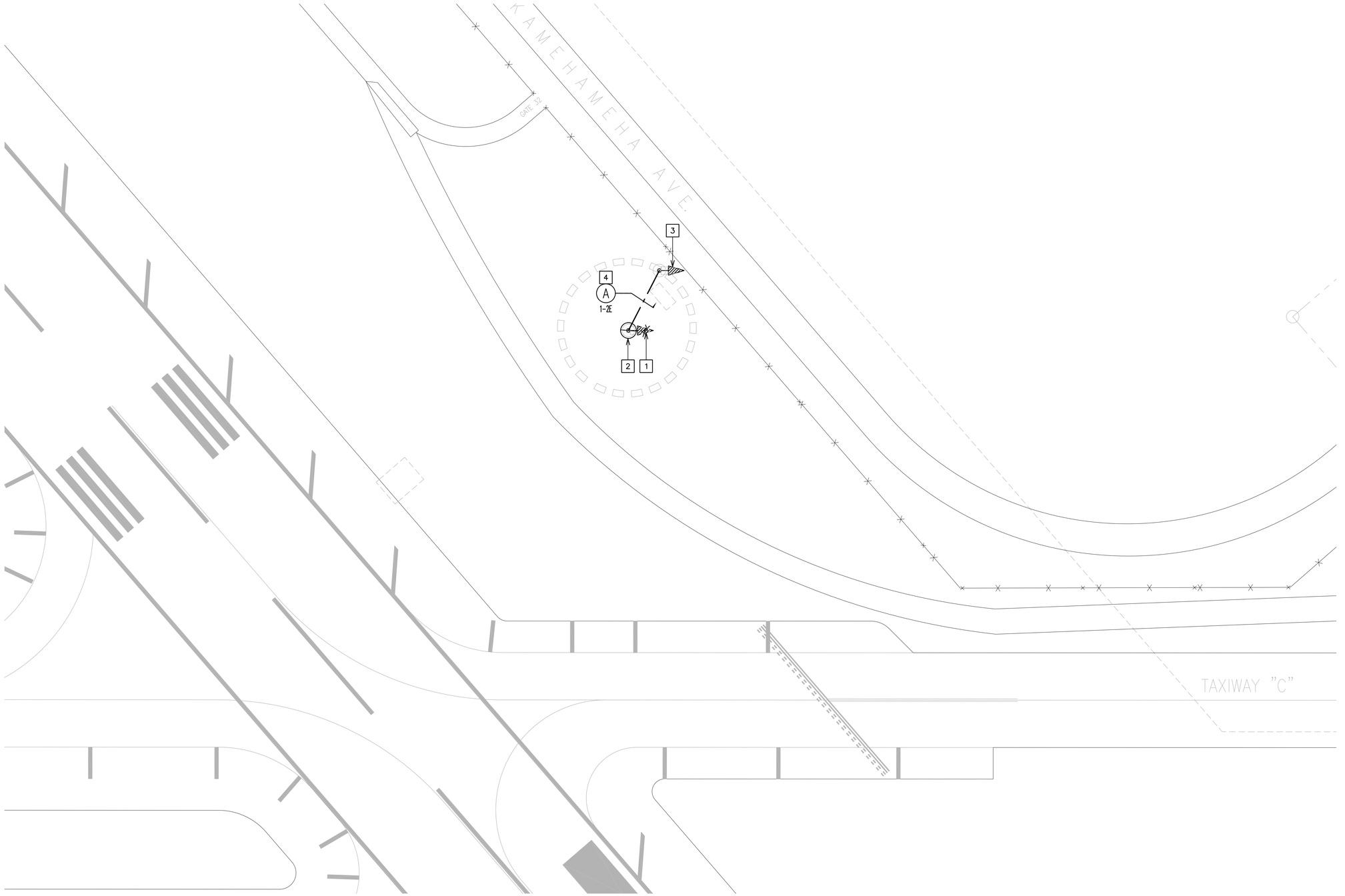

NOTES:

1. REMOVE EXISTING WIND CONE LIGHT FIXTURE, CONDUIT AND WIRING.
2. PROVIDE L-867 LIGHT BASE TO INTERCEPT EXISTING WIND CONE LIGHTING CIRCUIT.
3. L-806 SUPPLEMENTAL WIND CONE AND LIGHT FIXTURE. SEE E-6 FOR DETAILS.
4. 2"C, 2-1/C #8, 5KV. EXTEND EXISTING WIND CONE LIGHTING CIRCUIT FROM NEW L-867 LIGHT BASE TO NEW WIND CONE.

NORTH

RUNWAY 8 ELECTRICAL PLAN

SCALE: 1"=40'

40' 20' 0 40' 80' 120'

SCALE: 1"=40'

GRAPHIC SCALE

STATE OF HAWAII 1959

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AH1021-20

SHEET TITLE:

RUNWAY 8 ELECTRICAL PLAN

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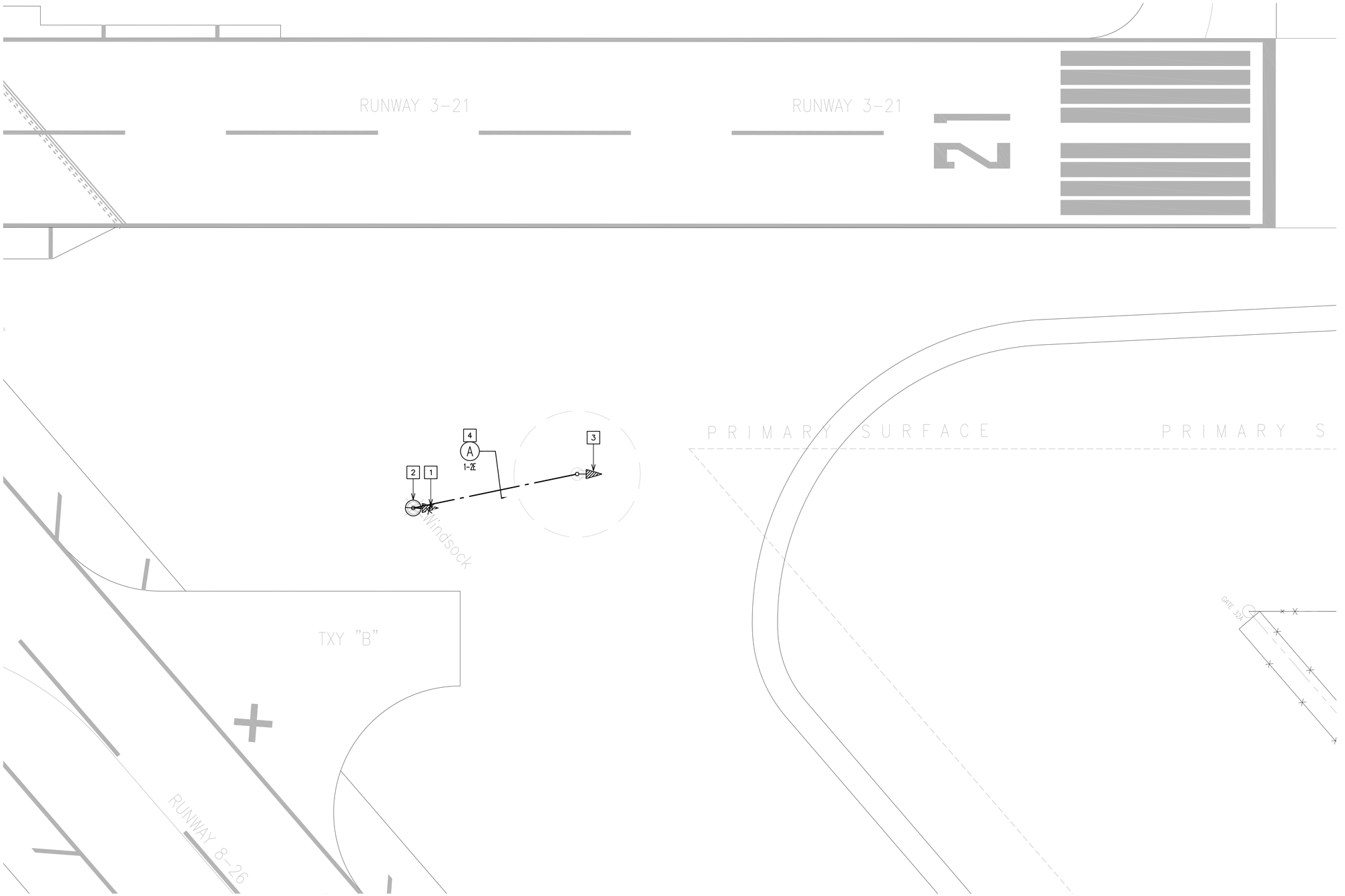
DWG. NO.
E-3



NOTES:

1. REMOVE EXISTING WIND CONE LIGHT FIXTURE, CONDUIT AND WIRING.
2. PROVIDE L-867 LIGHT BASE TO INTERCEPT EXISTING WIND CONE LIGHTING CIRCUIT.
3. L-806 SUPPLEMENTAL WIND CONE AND LIGHT FIXTURE. SEE E-6 FOR DETAILS.
4. 2"C, 2-1/C #8, 5KV. EXTEND EXISTING WIND CONE LIGHTING CIRCUIT FROM NEW L-867 LIGHT BASE TO NEW WIND CONE.

NORTH

RUNWAY 21 ELECTRICAL PLAN

SCALE: 1"=40'

40' 20' 0 40' 80' 120'

SCALE: 1"=40'

GRAPHIC SCALE

STATE OF HAWAII 1959

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RUNWAY 21 ELECTRICAL PLAN

DATE :	DWG. NO.
OCTOBER 2022	E-4
SHEET :	
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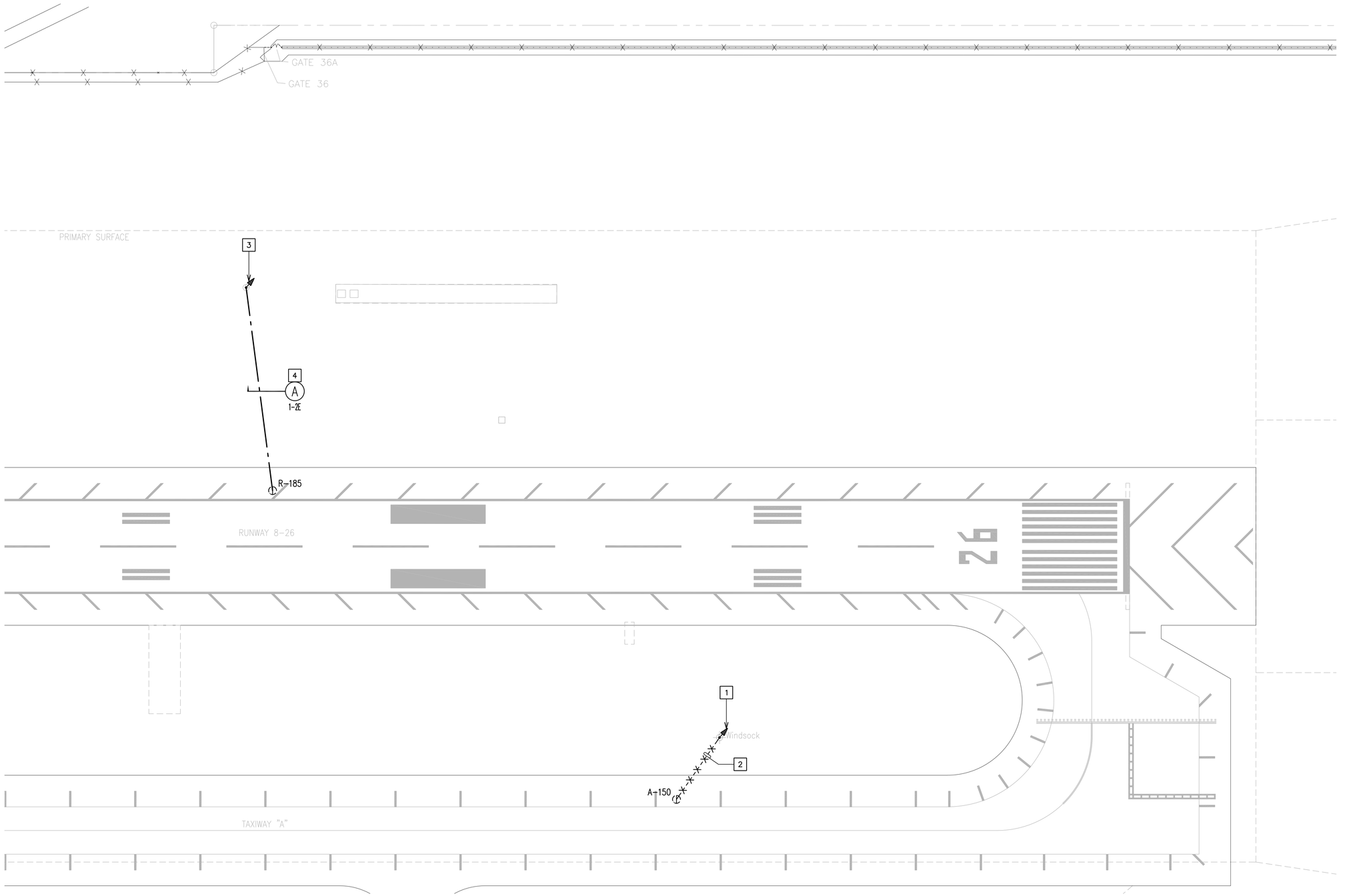

NOTES:

1. REMOVE EXISTING WIND CONE LIGHT FIXTURE, CONDUIT AND WIRING.
2. REMOVE EXISTING WIRING. ABANDON EXISTING CONDUIT IN PLACE.
3. L-806 SUPPLEMENTAL WIND CONE AND LIGHT FIXTURE. SEE E-6 FOR DETAILS.
4. 2"C, 2-1/C #8, 5KV. EXTEND EXISTING LIGHTING CIRCUIT FROM EXISTING RUWNAY LIGHT FIXTURE TO NEW WIND CONE.

NORTH

RUNWAY 26 ELECTRICAL PLAN

SCALE: 1"=80'

80' 40' 0 80' 160' 240'

SCALE: 1"=80'

GRAPHIC SCALE

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SHEET TITLE:

RUNWAY 26 ELECTRICAL PLAN

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SHEET :
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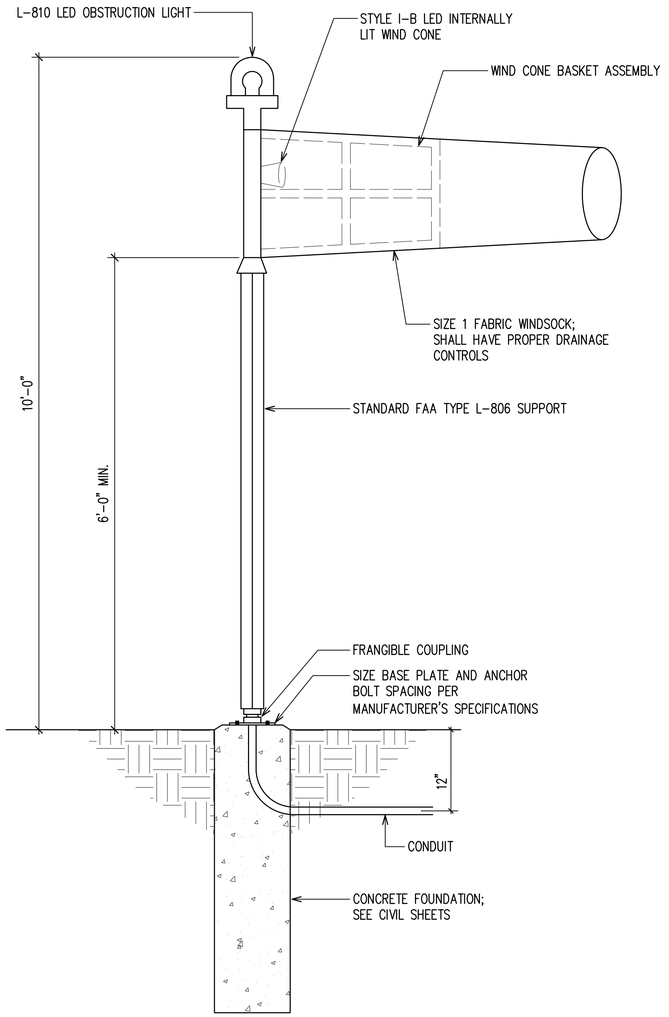
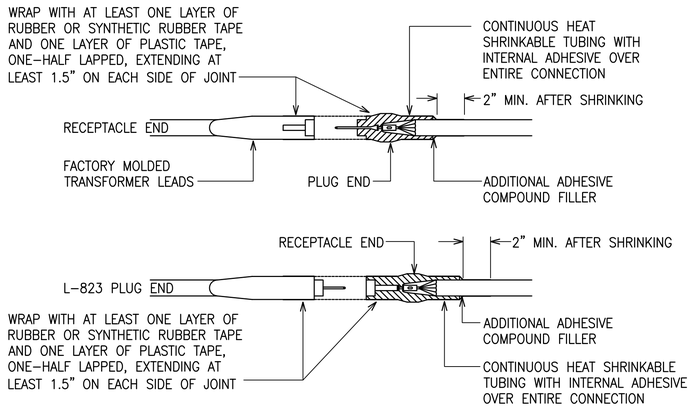
E-5



WIND CONE NOTES:

1. BOTH PRIMARY AND SUPPLEMENTAL WIND CONES SHALL MEET ALL REQUIREMENTS SPECIFIED IN FAA AC 150/5345-27E, FAA SPECIFICATION FOR WIND CONE ASSEMBLIES, DATED 09/26/13.
2. OBSTRUCTION LIGHT, TYPE L-810, SHALL MEET ALL REQUIREMENTS SPECIFIED IN FAA AC 150/5345-43H, FAA SPECIFICATIONS FOR OBSTRUCTION LIGHTING EQUIPMENT, DATED 09/28/16.
3. THE CONTRACTOR SHALL SUBMIT DETAILED SPECIFICATIONS AND ARRANGEMENTS FOR THE WIND CONE, SUPPORT, INTERNAL LIGHTING LIGHTING, AND OBSTRUCTION LIGHT PRIOR TO PURCHASE.
4. THE INSTALLATION OF THE PRIMARY AND SUPPLEMENTAL WIND CONE FOUNDATIONS SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM NUMBER 16522.1.
5. INSTALLATION OF THE WIND CONE AND ITS ELECTRICAL COMPONENTS SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
6. AFTER INSTALLATION THE CONTRACTOR SHALL RECORD THE GPS COORDINATES OF THE NEWLY INSTALLED WIND CONES. THE GPS COORDINATES SHALL USE THE NAD 83 COORDINATE SYSTEM. THE CONTRACTOR SHALL SUBMIT THE GPS COORDINATES TO THE ENGINEER.
7. SEE CIVIL DRAWINGS FOR SEGMENTED CIRCLE LAYOUT DETAILS.

1 / E-6 SUPPLEMENTAL WIND CONE DETAILS
NOT TO SCALE



NOTES:

1. RUBBER TYPE SHALL BE SCOTCH 130 OR APPROVED EQUAL.
2. VINYL TAPE SHALL BE SCOTCH SUPER 88 OR APPROVED EQUAL.

2 / E-6 TYPICAL SPLICE DETAIL
NOT TO SCALE

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